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THE PRINCIPLES AND PRACTICE OF

GOOD INSTRUCTION

PART 1

FOR OFFICERS AND NCO INSTRUCTORS

*Prepared under the direction of
The Chief of the Imperial General Staff.*

THE WAR OFFICE

February, 1947

DEFINITIONS

The words listed here are frequently used throughout the pamphlet in a special sense. If you are not quite sure what they mean, read through these definitions.

ASSIMILATION

The understanding and remembering of knowledge. Assimilating a lesson can be compared to digesting a meal. The food, or the subject matter of the lesson, does not do any good until it has been assimilated and has become part of the person.

KNOWLEDGE

The understanding and remembering of facts. Knowledge concerns storage in the mind only. Applied knowledge is a technique.

MOTIVATION

A man is motivated when he WANTS to do something. A motive is not quite the same as an incentive, for whereas a man is inspired and made enthusiastic by an incentive, his motive for wanting to do something may be a fear of punishment. Motivation covers ALL the reasons which underlie the way in which a person acts.

RECEPTION

The actual process of receiving new learning. It may be received through the ear by hearing, through the eye by watching or through the body by imitating, or through any combination of the three. A man will only receive learning if he WANTS to do so.

S

The quality of self-development, or the full expression of a man's personality. A well-developed personality will have :—

INITIATIVE
IMAGINATION
ADAPTABILITY
ALERTNESS
CHEERFULNESS
MATURITY.

A SKILL

A physical act, usually almost instinctive. When a movement of the body is not instinctive but needs constant thought, it is a technique.

A TECHNIQUE

A way of thinking or behaving. An application of knowledge, or skill, or both.

TRANSMISSION

The act of passing knowledge or skill from the instructor to the class. Transmission may be effected by talking or showing.

W

The qualities which centre around a man's WILL-POWER, but this quality does not mean will-power alone, and should not be thought of as such. It includes :—

COURAGE
TOUGHNESS
PERSEVERANCE
DISCIPLINE
SENSE OF DUTY
RESPONSIBILITY.

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*Prepared under the direction of
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INTRODUCTION

- This pamphlet is a guide to the principles and practice of good instruction. It is not meant to be read straight through like a novel, but to supplement practical experience and courses of instruction. If, however, it is studied by itself, it must be read carefully, **IN VERY SMALL DOSES**.
- ● Within the pamphlet can be found the principles of teaching ANY military subject from Field Cooking to Ballistics, but the method for teaching each subject is not, of course, worked out in detail. There are a few detailed examples taken from weapon training, signalling, MT instruction and the like, but for the rest, it is up to each instructor, once he has mastered the principles, to apply them to his own particular subject.
- ● Part 2 of this pamphlet is designed mainly for Chief Instructors and Methods Officers. In it, however, there is much information which is supplementary to that contained in the first part, and which will be of value to any instructor who has to arrange his own training programme.
- ● A specialist subject must have its own special vocabulary. Common words used in the normal way are often so vague or have so many alternative meanings that they cannot be relied on for accurate expression. Thus, special words, or common words given a special meaning, have to be used so that we can know exactly what we are talking about. In this pamphlet there are certain words used in a special sense to define the processes of learning and teaching. Each of these words is explained on its first appearance, and in addition there is a list of all technical terms, together with their meaning, on page ii and xvii.

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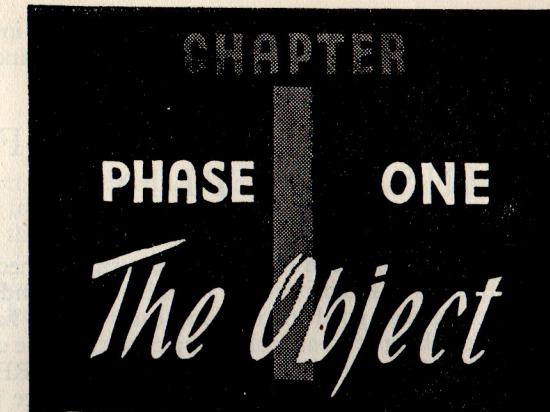
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WHAT IS "METHOD OF INSTRUCTION"?

1

Instruction is the art of getting someone to learn something he didn't know before. Method of Instruction is the way of getting him to learn it. The speed and success of learning depend upon the Method of Instruction.

2

When a man joins the Army he has many things to learn. Not only does he have to learn facts and figures as he did at school, he must also learn how to keep his body fit and strong, how to use complicated weapons and equipment, how to give and obey orders, and how to take on the qualities and characteristics of a good soldier. Even then, although he may be called a trained soldier, his learning is not finished. Daily he can learn new lessons from experience, for his job is never long the same. One station may be within the Arctic Circle, the next in the tropics ; each has its own technique of soldiering. The art of war itself is not static ; science invents new weapons, new weapons call for new methods of warfare, and new methods of warfare result in new minor tactics. Until his last day with the colours he will spend the majority of his life in the Army in learning and practising to be an efficient and up-to-date soldier. In the final test of battle, no matter how good the equipment, how brilliant the strategy, how excellent the commander, the success or failure of an army will depend largely on the legacy of months of training, and the training, in turn, will depend upon the Method of Instruction.

3

Method of Instruction itself is not a subject that can be learnt off pat like the rules of a game of football. In the last 50 years education, industry and science have all contributed towards a great advance in methods of teaching, and although this pamphlet sets out to consolidate the ground already gained, it would be a mistake to think that the

methods described in it are complete or final. Every individual instructor can make his own contribution towards new and better methods of instruction.

THE FIVE STAGES OF INSTRUCTION

4

The whole business of instruction falls into five easily defined stages. First of all the OBJECT of the instruction must be clearly understood, and it is worth noting that good instruction nearly always has as its object not only the teaching of a particular subject but also the development of the student's character. The second stage is the PREPARATION of the lesson by the instructor, and it is in this stage that the success or failure of a lesson is often decided. The third and fourth stages of instruction are simultaneous, the instructor gives out while the class take in, and these stages are called the TRANSMISSION and RECEPTION of the lesson. It must not be imagined, however, that the act of reception is a passive affair. On the contrary, often the instructor will only transmit to the class the will to learn, and the student will have to acquire the learning by his own efforts. Finally, learning is no good unless it is kept in the mind ready for instant use. This will not be so unless the instruction has sunk in properly. This "sinking in" is the final stage of instruction, which we call ASSIMILATION.

5

Here, then, are the five stages of instruction :—

OBJECT
PREPARATION
TRANSMISSION
RECEPTION
ASSIMILATION

This framework of OPTRA will give us a basis for the study of instruction. Each chapter will deal fully with one of the stages, starting with the OBJECT in this chapter and working through to ASSIMILATION in the last. If you want to know what parts of the instructor's art are covered by each stage, turn to the synopsis on pages vi-xvi. Here is a preview of the remainder of this chapter :—

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THE OBJECT OF ALL TRAINING

6

The object of all training is to fit the soldier in mind and body and character for his place in the Army in peace and war. That's obvious, you may think, just the sort of commonplace you expect to find in a pamphlet. Yet, although all of us will accept that principle as a thing we have always known, how many of us have paused to consider our everyday instruction in its light?

7

. . . to fit him for his place in the Army . . .

What does the soldier need to fit him for his place in the Army? If you come to analyse it, you will find that most soldiers have to be able to DO a lot of things, and while the ability to DO may entail a certain amount of knowledge, there is little pure academic knowledge that will be of any service to him. Yet there exists with some instructors the idea that knowledge and teaching are somehow the same thing, and they will burden a man with many facts which will fit him for the examination room rather than the battlefield. Does it fit the soldier for his place in battle to know the weight of every part of his weapon? Of what metal the parts are made? The organization of the L of C area? If he is a specialist he may have to know about such things, but they typify much of the unnecessary information that is pumped into classes without object or purpose except to fill the little squares on the training programme. The unbalanced enthusiast (as we shall see in Chapter 3) is a particular offender. To him, the subject he instructs is so interesting and so important that it becomes an end in itself. His eyes are glued to his own little patch in the broad pattern of military training so that he cannot see his part in relation to the whole. Before deciding the object of your lesson, stand back and review it from a distance. Ask yourself :—

Is it PRACTICAL?

Is it USEFUL?

Does it contribute towards the main object of all training?

If you can't answer the question yourself, ask someone senior to you.

THE OBJECT OF EACH PERIOD

8

Now you are certain your instruction will be a useful contribution towards the main object of all training, you must decide just exactly how much you are going to achieve in each period. The ultimate object of training is reached by capturing a series of limited objectives, each well consolidated and secure before the next is attempted. Hence a vague generalized idea of what you are going to teach is not enough. Suppose you stopped an instructor as he reached his place of parade and asked him what was the object of the lesson he was about to give. Would you get answers like these?

ONE "I'm going to give them a few general ideas about tank-infantry attacks."

TWO "A bit of revision on the LMG."

THREE "I'm going to run through some map reading stuff."
Or these?

ONE "To teach the principles of tank troop tactics and the co-operation of an infantry platoon and a troop of tanks in the attack."

TWO "LMG. To test loading, sight-setting, aiming and IA, and practise each in turn until they are up to TOET standard."

THREE "Map Reading. To test and revise contours. To teach gradients."

The first set of objects was generalized and vague, the second was limited and CLEARLY DEFINED.

9

It is hard enough to keep the class from leading you off the point when you know exactly what you want to teach. If you don't even know that, there is little hope of avoiding the aimless wanderings of digression and repetition. Again, unless you can lay your finger on the main factors which lie behind achieving your object, how can you test whether or not your class has mastered them? Unless you know what you want to teach, you will not be able to test whether you have taught it.

10

The object of a period is not always so easy to define as in the examples given above. Often there are subsidiary objects as well as the primary one of teaching a certain lesson. These too must be clarified before an instructor can set to work to prepare his lesson. Suppose you visited a divisional training area where infantry units were carrying out platoon training and found five or six platoons engaged in exercises on the platoon in the attack. Each platoon commander might have put on his written scheme of the exercise, "OBJECT: To exercise the platoon in attack," but would all the exercises be the same? The first platoon might be holding a full-scale field-firing exercise, the

second might only be practising the assault or consolidation phase, the third might be doing several separate attacks at full speed with forced marches between each, the fourth might be doing only one leg, and in a leisurely fashion at that. Yet none of these platoon commanders would be wrong. The first would explain that he had practised every aspect of the platoon attack and his exercise was a final revision and test, the second that he wanted to teach one phase thoroughly before holding a full exercise, the third that he was testing the endurance of his platoon as well as their tactical knowledge, the fourth that he wanted to give his men an easy day in the open air in the middle of a hard week of indoor work. It is much better from all points of view but especially for the purpose of clearing the instructor's mind, to define the object in detail at the head of the lesson-scheme. Here, for instance, the four platoon commanders might have written:—

FIRST PLATOON:

OBJECT: To test and revise all aspects of pl in the attack.

SECOND PLATOON:

OBJECT: To teach the consolidation phase of pl in the attack.

THIRD PLATOON:

OBJECT: (a) To test endurance.
(b) To test 'O' group procedure and drills in attack.

FOURTH PLATOON:

OBJECT: (a) To revise all aspects of pl in attack.
(b) To give the pl a change and a rest from indoor trg.

THE DEVELOPMENT OF CHARACTER

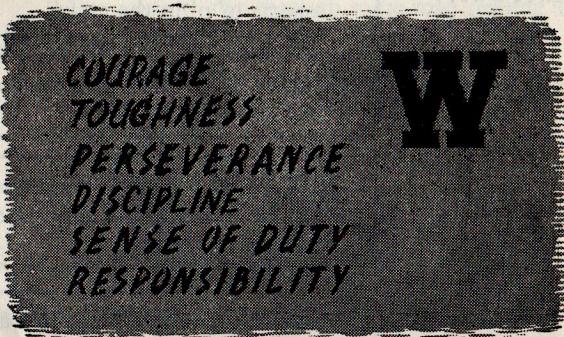
II

... to fit the soldier in mind, body and CHARACTER ...
The object of teaching lessons which concern the body and the mind can usually be clarified with little difficulty. But what about character? It is true that there are some lessons, such as drill periods and leadership courses, which are specifically designed to develop character, but not all instructors are aware that character training can, and should be, blended with the teaching of any subject. This is important, for unless a man has the guts to do his job in battle, all his technical skill and knowledge will be wasted. First of all, what are the characteristics required by a good soldier? Since the art of war began, men have exercised their brains to analyse and tabulate these qualities. If you read each great soldier's list, those described by Thucydides in his

history of Ancient Greece, those selected by Hannibal the Carthaginian, by Caesar, by Frederick the Great, by Napoleon, Wellington and the great generals of today, you will find that although they differ in detail, the qualities they select all fall naturally into two groups.

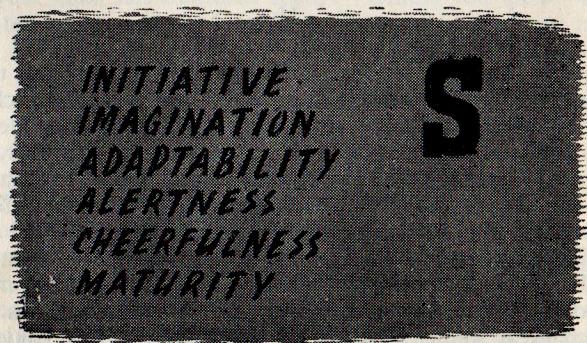
12

For want of a better word to cover the meaning of all the qualities in the first group, we shall collect them under the label of WILL-POWER (or W), round which they centre. The qualities are determination, perseverance, toughness, and courage in all its aspects. In a well-balanced man, these qualities will ensure self-discipline and willing acceptance of outside discipline ; they will breed the sense of duty, service and loyalty and an outlook of responsibility. Those, then, are the W. qualities. Have one more look at them before you go on :—



13

The second group can be put under the heading of SELF-DEVELOPMENT (or S). They include initiative, imagination, adaptability, alertness, a mature outlook, and a steady cheerful disposition. Take a good look at these S qualities :—



14

So much for the qualities themselves ; now for their development in training. The way to train a high jumper is to make him start by jumping a height well within his power until he is easy and confident, and then gradually to increase the height against which he has to match himself until he has reached his maximum. Similarly with the W qualities, we must set a man easy tests of toughness and endurance at first, gradually increasing their difficulty until his W is developed to its maximum. The most obvious way of training up a man's W is by drill, forced marches, assault courses, in fact by all forms of endurance training in which a man is physically and mentally "up against it" and succeeds in winning through. Responsibility is a test of a man's W, and the extent of his W can best be measured at times of severe strain.

15

It does not always need, however, specially devised exercises to test and develop W ; in fact, life itself involuntarily provides a daily exercise for these qualities. The instructor can always be on the look out for opportunities of including a full-stretch effort for his class during routine training. He can always set the highest standard of discipline, not in the parade ground sense (for when teaching many subjects this type of discipline is the worst enemy of good instruction), but in a rigid insistence that there shall be no slovenly work and that difficulties are faced squarely and without evasion. Although W is developed by making men do things that they do not like doing (such as wading through mud and marching up and down a drill square) they must do it willingly if the training is to achieve its effect. Herein lies the difference between the discipline of a chain-gang and the discipline in a good unit ; the former is the enforced external discipline of fear, the latter is the willing self-discipline of service.

16

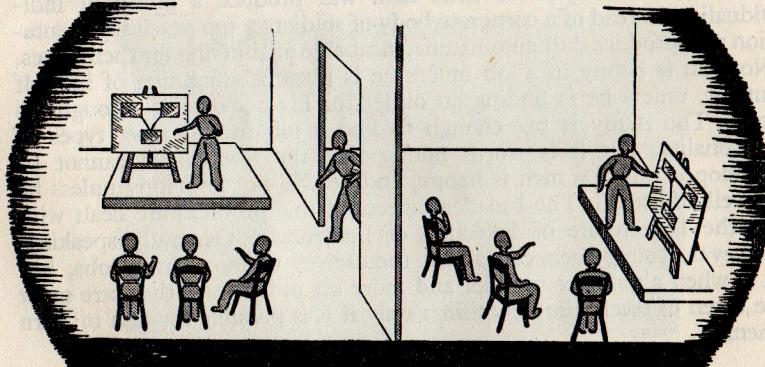
The S qualities are developed by making the soldier think and act for himself ; in other words, by encouraging him to make the most of his personality. This may sound the exact opposite of the methods used to train W qualities such as discipline and tests of endurance. In fact, both are necessary ; too little drill will produce a group of individualists instead of a corporate body of soldiers ; too much regimentation will produce dull automatons, incapable of thinking for themselves. No man is happy in a job unless he is putting something of himself into it, unless he is finding an outlet for his personality through his job. The Army is big enough to find a job to suit most types of personality, but it is worth noting that the S qualities cannot be developed unless a man is happy, and he will not be happy unless he is well-adjusted. The broader aspects of this problem are dealt with by the Directorate of Selection of Personnel. Generally speaking, however, young men can adjust themselves to most army jobs, but it is when a man grows older and more set in his ways that care must be taken to teach him new things only if it is possible for him to learn them.

The instructor can develop the S qualities in almost any type of instruction. Methods of promoting class-participation are fully discussed in Chapters 4 and 5, but perhaps it is worth mentioning here some examples of the types of training that specifically encourage the S qualities. Initiative, imagination, and alertness are needed in any exercise which is carried out by individuals or by small groups of two or three, such as a map-reading point-to-point competition or a long cross-country trek through "enemy" territory. Perhaps the best exercise of all (named Exercise ME) is one in which men are dropped from a truck at night in unknown "enemy" country as spies. Any number of tasks can be worked out for them to perform, either in groups or individually, and the exercise can be designed to make them live on their wits for at least 24 hours, and finally to report at a rendezvous with their hard-won information. ABCA periods and discussions on general subjects will help a man towards a more mature and broader outlook, but the latter need very careful chairmanship.

Enough has been said to emphasise the importance of character training. For every lesson the instructor should have an OBJECT plus, the object of the lesson itself plus a method which will develop character. Suppose, for example, you are teaching a class of junior NCOs the subject of Supply in the Field. If you are a first class instructor, and

give the lesson as a lecture, the class MAY gain a great deal of knowledge but they will get no character training. If, on the other hand, you give the class a period in which to punch up the subject and then select certain members to give the lecture to small syndicates, the class will

have learnt at least as much as you could have taught them, and they will have had a period of good character training as well. It is true that the time spent will be longer and you will not be so certain that every member of the class will reach the required standard of knowledge, but on the whole there will be a net gain.



The good instructor will always approach training in this way. In the ultimate test of battle the qualities of a man's character are at least as important as his technical performance, and in training they are much harder to develop. It is, therefore, clearly sensible that every lesson, although primarily designed to train body or mind, should be regarded as a chance to develop and strengthen the qualities of W and S, the qualities of the Worthwhile Soldier.

SUMMARY

THE FIVE STAGES OF INSTRUCTION

OBJECT

PREPARATION

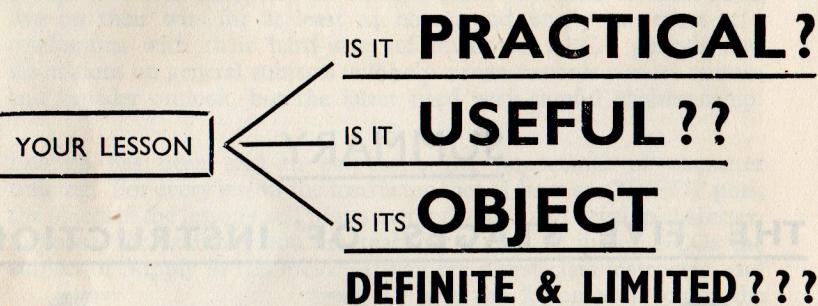
TRANSMISSION

RECEPTION

ASSIMILATION

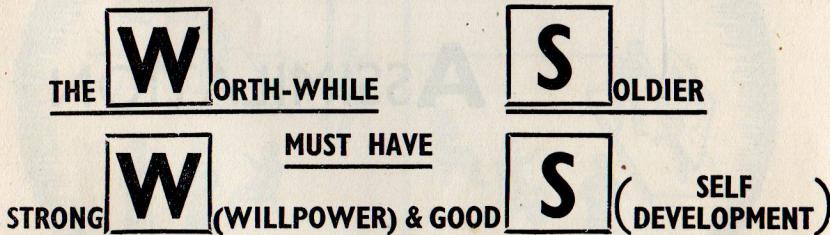
THE OBJECT

THE OBJECT OF ALL TRAINING IS TO FIT THE SOLDIER IN MIND, BODY AND CHARACTER FOR HIS PLACE IN THE ARMY IN PEACE AND WAR.



HAVE YOU GOT AN OBJECT—PLUS?

ARE YOU GOING TO ACHIEVE THE OBJECT OF THE LESSON
BY A METHOD WHICH WILL DEVELOP CHARACTER?



CHAPTER PHASE **2** TWO *Preparation*

In the first chapter we viewed briefly the principles underlying the five stages of instruction under the heading OPTRA, and dealt fully with the O, the importance of clarifying the object of the lesson. Now we come to P, how to Plan and Prepare your lesson so that it will fulfil the object. Here is a preview of this chapter:—

PREVIEW

Sections

WHAT SHALL I TEACH?	3-6
HOW MUCH CAN THE CLASS TAKE IN?	7-10
WHAT METHOD SHALL I USE?	11-20
HOW SHALL I SET ABOUT IT?	21-31
SUMMARY	32

2

Throughout the whole of your preparation, it is most important to consider your lesson not from the point of view of the instructor, but from that of the class. How can they be kept mentally active? How much of the lesson can they reason out for themselves? What will they find interesting? What will be their difficulties? These points are dealt with fully in Chapter 4—Reception, but unless they dominate the instructor's mind during preparation, his lesson will be in danger of boring them or of passing over their heads.

WHAT SHALL I TEACH?

3

In selecting the matter to be taught, there are three likely alternatives :—

- FIRST** The subject matter may be already selected for you, as in Small Arms Training.
- SECOND** All the necessary subject matter may be collected for you but not laid out in lessons, as in Notes on Map Reading, 1929.
- THIRD** The subject matter may have to be collected from many sources, perhaps from several pamphlets, from notes taken on courses, or from your own battle experience, or from a combination of all three.

4

The first situation looks easy, but be careful that the ready-on-the-peg lesson does not make you lazy. Although most of the work has been done for you, remember that the lesson has got to be put across in YOUR way, in YOUR words and by YOUR personality. No pamphlet exists which will stand a word-for-word presentation. It needs a careful study to decide how you, with your particular abilities, can best teach the matter.

5

When you have to select the matter yourself, you will find it is more a question of what to exclude rather than what to include. Look at this diagram.

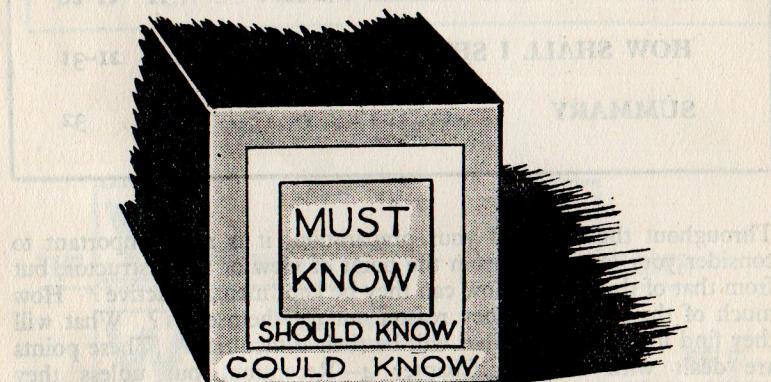


FIGURE 1

There will usually be a large mass of material which you might include in your lesson. Some of it **MUST** be included if the class is to learn the lesson at all. Some of it will be desirable but not essential and some of it will be comparatively unimportant.

Reflect carefully before you include any item in the "MUST KNOW" or "SHOULD KNOW" box. The Army wants men trained to DO specific jobs. There is a tendency to waste instructional time in teaching men knowledge which is of little practical application. After deciding the contents of your **MUST KNOW** and **SHOULD KNOW** box, consider how long it will take to instruct these thoroughly. If it will take the whole period, all else must be rigidly excluded.

6

Here is a simple drill. List each item downwards on a piece of paper in order of priority. Put opposite each the amount of instructional time you think it will need. When you have used up your total time, draw a line. The remaining items must be left out. Suppose you had ten minutes in which to instruct your wife in the handling of the standard carpet-sweeper. Turned into army vernacular, your list might look something like this :—

	Time (Mins.)	
1. Elementary Handling. (Pushing up and down the carpet)	1	MUST KNOW
2. Discharging Sweepage. (Emptying the pan)	1½	
3. Care and Maintenance. (Oiling the wheels and cleaning the brushes) ..	2	
4. Immediate Action (a) Stoppage in the Chamber. (Something stuck in the pan) (b) Faulty Transmission. (Spring belt come off)	1½	
5. Clearance Adjustment. (Putting the brushes up or down)	X	SHOULD KNOW —10 mins.
6. Replacing rubbers, circular, rotating. (New wheels)	X	
7. Replacing operating shaft. (Broken handle)	X	

HOW MUCH CAN THE CLASS TAKE IN?

7

In gauging the time necessary to instruct each item, you must consider the standard of the class. Ask yourself two questions:—

How much do they know already?

How fast can they learn?

Never assume a man knows nothing. Some instructors jump to the conclusion that because they did not give a man all his previous instruction themselves, he is therefore bound to have been badly trained. So, seizing on any little point to proclaim that he knows nothing, they start the whole dreary business again, right from the ground floor. This lack of good faith between instructors in the succeeding stages of a man's training has disastrous consequences. The quickest way of making a man bored and browned-off is to go through the motions of teaching him what he already knows. Even if a man has learnt a lesson and forgotten it, he must not be taught it again in the same way. He will learn more quickly the second time.

8

Sometimes you can determine the standard of a class by an initial test. When this is not possible, spare no pains to find out just exactly how much your class does know before you start your preparation. If you leave it until you start the lesson itself, it will be too late. Here is a practical example of how your preparation will be governed by finding the standard of the class.

EXAMPLE.

A miscellaneous draft at a depot has its posting unexpectedly delayed. An emergency training programme is drawn up which includes lessons on the rifle. The men have been graded by ability into three platoons. No. 1 Platoon Commander finds his men have done these lessons, on the average, five times, No. 2 finds his men have done them twice, and No. 3's men only once. How will these three officers prepare these same lessons?

Think for a minute, and then turn this book upside down for the answer.

ANSWER.

No. 1.—As laid down in SAT, Vol I, Pamphlet No. 3—Intro-
duction: Trained Soldier Instruction.

No. 2.—As laid down in WT Memorandum No. 8—Progres-
sive Weapon Training.

No. 3.—As laid down in SAT, Vol I, Pamphlet No. 3—For-
Recruits.

If one danger is boring the class by re-teaching them what they already know, another equally great danger is muddling them by teaching too much that is quite new. There are some instructors who imagine that if they increase the number of periods in a course by 25 per cent, the amount learnt will also be increased by 25 per cent. In point of fact, the amount learnt will probably be less. A man can absorb only a limited amount in a certain time, and as a general principle it is better to teach too little well than too much badly. If the class is graded by ability (more of this in Chapter 4—Reception) it is not hard to gauge their speed of assimilation. If not, it is better to use as your yardstick not the top three, but the bottom three men in your class. If you go too fast for the dull men they will certainly become muddled. If you go too slow for the bright ones you can still hold their interest by giving them the harder questions, by letting them demonstrate to the squad and help to supervise, and generally by making them feel that they are helping to give the instruction.

10

This does not mean that you can limit your own knowledge of the subject to the amount the class can assimilate. In selecting material for your lesson you should take the chance to extend your own knowledge and skill well beyond the minimum requirements. An instructor who has just enough knowledge to cover his lesson and no more, is like a man standing on the edge of a precipice. One unexpected question, and over he goes. Be sure that you have access to the best and most up-to-date pamphlets—this can always be done if you take enough trouble. "Say what you like, he knows his stuff"—those words, spoken of an instructor, prove that whatever his shortcomings in other directions, he has gained the respect of this class by his mastery of the subject.

WHAT METHOD SHALL I USE?

11

Now that you have decided WHAT to teach and HOW MUCH the class can take in, the next step is to decide WHAT METHOD you are going to use to put the lesson across. There are many to choose from. The Lecture, the Playlet, the Sweat-and-Test method, the "Lesson," the Demonstration and so on. Which will suit your subject best? This question is answered more fully in Part 2, but for the junior instructor the first and golden rule is to USE THE MAXIMUM SENSE APPEAL, or to teach through as many of the senses as possible at the same time.

There are five senses :

TOUCHING

SEEING

HEARING

SMELLING

TASTING

Unless you are teaching cookery, the sense of TASTING is not likely to be useful ; SMELLING may enter into the teaching of gas or possibly fieldcraft against an unhygienic enemy, but in most instruction the three vitally important senses are TOUCHING, SEEING and HEARING in that order.

If your wife wanted to teach you the difference between real and artificial silk stockings, could she do it without showing you samples ? Certainly not without a great deal of talking—probably not at all. If she took you to a shop window and let you look at both types, it would help ; but not very much. If, however, she gave you a pair of each to feel while she explained which was which, you would quickly and easily learn the difference.

The senses of TOUCHING, SEEING and HEARING would then simultaneously confirm each other. But note that the sense of TOUCHING was, by far, the most important, then SEEING, while HEARING alone was almost useless.

How does this apply to military instruction ? First, the instructor must be certain whether he is teaching a skill, knowledge, or a technique. A SKILL is a physical act (usually almost instinctive), such as riding a bicycle or pressing a trigger. KNOWLEDGE is a matter of understanding and remembering facts, such as war establishments, the principles of tactics or the theory of gunnery. A TECHNIQUE is a way of thinking and behaving based on knowledge and often on skills as well, such as tactics, man-management, leadership, etc. Most SKILLS are not truly learnt until they become an instinctive habit which, on a telegram from the brain, will be performed by the body without any conscious effort of thinking. They can only be learnt by practice ; no one ever learnt to ride a bicycle by listening to lectures. KNOWLEDGE can be learnt in many ways, eg, by experience, by trial and error, by studying a book, by listening to lectures or by seeing a film. TECHNIQUES may have to be studied first, but they too have to be practised before they can be learnt.

Here are two examples to fix these definitions in your memory :—

When a boy starts to learn how to ride a bicycle in an open field, he may have no knowledge of the subject at all, yet he will soon pick up the knack of balancing and steering. So far he has gained SKILLS only. Next he studies the Highway Code and watches traffic in the streets, thus adding the knowledge necessary to cycle in public. Finally, when he combines the skill and knowledge he has learnt by practising on roads and streets he is beginning to acquire the TECHNIQUE of cycling, which is based on knowledge and subconscious skill, but which requires attention, thought and practice before it can be perfected.

Suppose you are teaching a soldier to use a weapon. He must be able to load, unload, fire, aim and maintain the gun in action ; perhaps nine or ten different physical acts. Those are SKILLS. He must learn the performance of the weapon, the tactical employment and the theory of fire. That is KNOWLEDGE. When he combines both of them in handling the gun on a tactical exercise he is acquiring a TECHNIQUE.

Here they are again :—

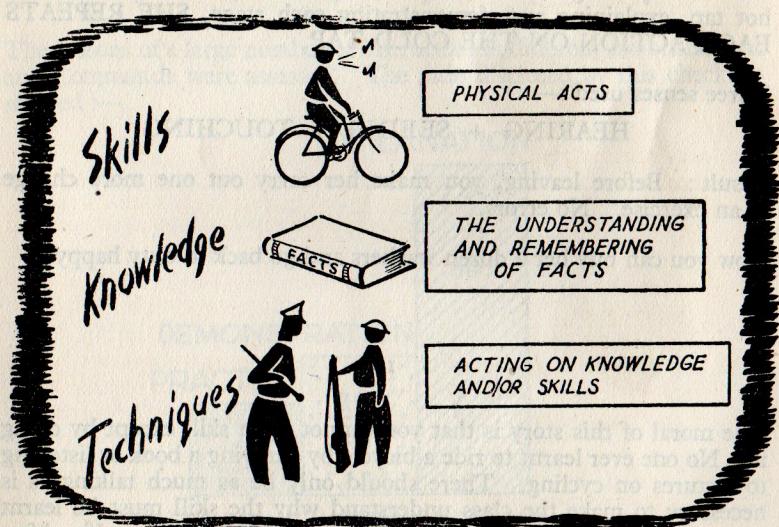


FIGURE 2

What is the relative importance of the senses in teaching a skill?

Suppose, on your last night at home on leave, your wife tells you that the hot water tap on the sink keeps dripping. Too lazy to do the job yourself, from the depths of your armchair you explain how the washer should be changed.

One sense used : HEARING

Result : Next leave you find the tap still dripping.

Although your explanation was good, when she started the job, somehow she didn't seem to remember just how it should be done. This time you change it yourself, explaining each stage while she watches, in case it wears out again.

Two senses used : HEARING + SEEING

Result : Next leave, you find the COLD tap is now dripping unchecked.

Why didn't she put it right? Well, she got on splendidly until it was half-stripped and then she just couldn't manage to undo that little screwy thing. This time, while you change the washer on the hot tap, explaining and demonstrating each stage, SHE REPEATS EACH ACTION ON THE COLD TAP.

Three senses used :—

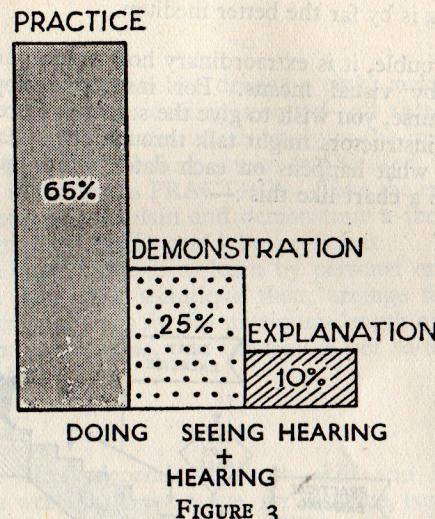
HEARING + SEEING + TOUCHING

Result : Before leaving, you make her carry out one more change as an exercise. No errors.

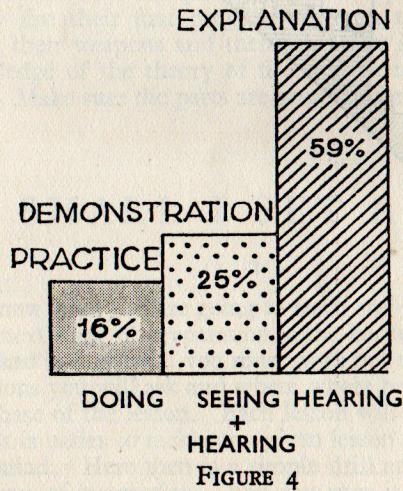
Now you can buy her a dozen washers and go back to duty happy.

The moral of this story is that you cannot learn skill except by doing it. No one ever learnt to ride a bicycle by studying a book or listening to lectures on cycling. There should only be as much talking as is necessary to make the class understand why the skill must be learnt and to explain, if necessary, the mechanics of the skill itself. After that, there must be no more monologue. The skill may be shown to them, with or without comment, and they must be carefully coached as they try their first few practices, but the important thing is ACTION, doing, or practice. The value of an instructor in teaching skills can be gauged not by how much he talks, but how little.

Here is an illustration. Some weapon training lessons given to recruits were analysed and it was found that an average class learnt best when Explanation, Demonstration and Practice were in the following ratio :—



The lessons of a large number of instructors in different establishments and Commands were assessed. The ratio disclosed by this check-up showed :—



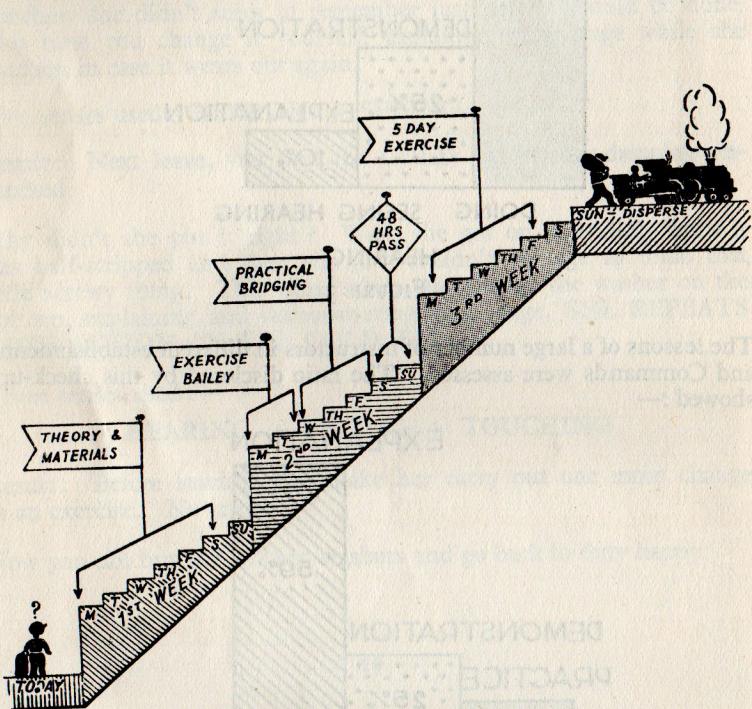
This proves what many people have always suspected—most instructors talk too much.

What senses can we use in teaching Knowledge? Usually, only two:—

HEARING + SEEING

Of the two, seeing is by far the better medium.

If you take the trouble, it is extraordinary how much pure knowledge can be taught by visual means. For instance, suppose, at the beginning of a course, you wish to give the students a preview of their syllabus. Some instructors might talk through the syllabus week by week, describing what happens on each date. How much better to run through it on a chart like this:—



So, when preparing a lesson to teach knowledge, consider how you can increase the visual instruction and how you can cut down the talk. There are playlets, the epidiascope, charts, posters, the blackboard—all available to appeal to the class's sense of SEEING. Remember the saying (attributed to Confucius)—One Picture is Worth a Thousand Words.

Techniques cover a wide field; driving a tank, cooking in a mess-tin, commanding a regiment, drilling a squad—all these are techniques. There are a few simple rules which apply to the instruction of all of them. As with skills, all three senses can be used, but in most cases nothing is so important as PRACTICE. Take the example of drilling a squad. You could explain and demonstrate a thousand times, but without practice no NCO could be proficient. In fact, the only way to learn a technique is to learn by personal experience. When preparing to instruct a technique then, arrange for the maximum number of personal trials for the maximum length of time per person, always ensuring, of course, that the trial is not so long as to tire the student unduly.

A technique often depends on both skill and knowledge. The handling of a weapon on the range, for instance, combines the knowledge learnt in the classroom with the skill learnt on the barrack square. Before the initial practice which combines both, each must be well and truly learnt, because any fault in one will be magnified under the stress of trying to combine the two. It is often worth while revising the basic ingredients of a technique before the first practice. For instance, before they fire their first range course put the class through the TsoET on their weapons and then ask a few questions to brush up their knowledge of the theory of fire, the rules of range procedure, and so on. Make sure the parts are sound before fitting them into the whole.

HOW SHALL I SET ABOUT IT?

Now you know what you are going to teach and what method you will use. The next stage of preparation is the hardest work. The lesson must be licked into shape; you must work out the sequence, consider what questions you will ask and when, where best you can summarize a part or phase of the lesson. Each lesson will need individual treatment, but it is easier to tackle any given lesson if you have a drill for it in your mind. Here then is a simple drill applicable, in principle, to most forms of instruction. You can vary it in detail to suit your needs.

First tell your class the object of your lesson. The lesson may have a direct battle purpose (such as the construction of a slit trench) or its object may be indirect (such as drill). You will not get a receptive class unless they believe there is some point in the instruction; in the first case the point is obvious, in the second it is not so immediately apparent. For the class to realize the personal importance of mastering a lesson is perhaps the most important single factor towards successful learning. This is dealt with more fully in Chapter 4—Reception, but remember that here is your chance to give the good solid reasons why the lesson must be learnt. These reasons can nearly always be shown in the light of a Battle Purpose.

It is useful to give the class a long view of the lesson they are about to learn. Tell them what it is going to contain, how it fits in with past and future instruction. This pre-view and tie-in is of particular importance to intelligent students who will always learn better if they know just which rung of the ladder they have reached. A useful tip is to arrange links between each period of instruction so that the whole programme dovetails into a logical sequence. For instance, suppose a class had two successive periods, a demonstration of a battery shoot followed by a lecture on Supply in the Field. At the end of the shoot the instructor could finish: "In the last 20 minutes you have seen 460 rounds fired. Suppose this were a real battle. What vehicles brought up these shells? How will they be replaced? Who will demand this replacement? Who will supply this replacement?" The class would answer as best they could. Next period, the lecture on Supply in the Field, they would be already oriented to the subject.

If the lesson is one of a series, before breaking new ground it is often advisable to confirm what has gone before. This revision can be achieved by practice in the case of skills and techniques, and by a few searching questions in the case of knowledge. If the answers are unsatisfactory, it may be necessary to run through a précis of previous training. Now we come to the arrangement of the material of the lesson. It should be drawn up in logical sequence and split into definite phases, each of which must be securely driven home before the next is attempted.

What is a logical sequence? Two sequences that have served the Army well for many years are:—

From the KNOWN to the UNKNOWN.

→ EXPLAIN → DEMONSTRATE → IMITATE
→ PRACTISE →

Any common-sense arrangement that leads the class smoothly along the path will serve. But there must be rests. As your stomach could not digest a non-stop bout of eating for an hour, but could easily assimilate six attractive courses with a ten-minute interval between each, so the class cannot digest a non-stop stream of instruction unless there are pauses to confirm and assimilate each phase. Balance your lesson plan as a chef balances a dinner menu, only, unlike him, do not put your main dish in the middle. No matter how good the instruction, the receptive ability of the class will not always be 100 per cent. Here is an approximation of the receptivity of an average class over a 40-minute period:—

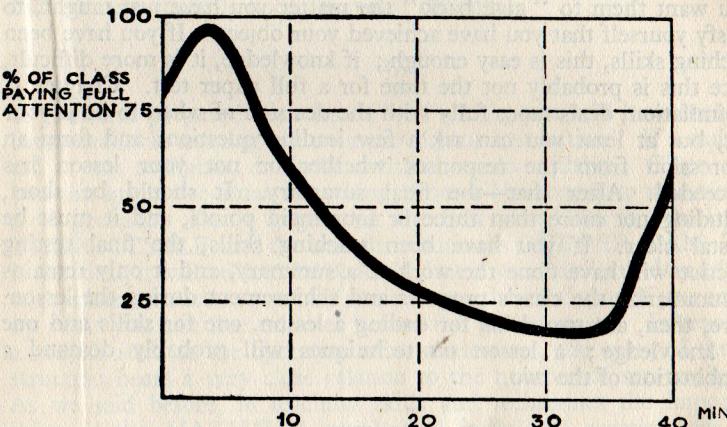


FIGURE 5

Your main dish, then, the core of the MUST KNOW square, should come at the beginning or at the very end. Pauses for digestion can be made by repetition of the same matter presented in a different way, and by summaries. These should occur after, at the most, 15 minutes, so that a 45-minute period will have two or three intermediate summaries and one final summary. It is worth while relating each phase to the next in this way:—

TEACH PHASE I

CONFIRM (QUESTIONS OR PRACTICE AND SUMMARY)

RELATE PHASE II TO PHASE I

TEACH PHASE II

CONFIRM (QUESTIONS OR PRACTICE AND SUMMARY)

.....and so on.

The end of your lesson needs special consideration. The final summary should in fact be final, the very last words the class hear before they leave the arena. Some instructors even go so far as to make their class pack up kit, and do not deliver their summary until they are ready for the road. This is not always to be recommended. The class, impatient to be off, do not give their full attention. The knowledge that the kit has still to be collected acts as a buffer to this impatience. However that may be, do not summarize until you have asked the class for questions. When they have cleared up any point they want from you, there is still something you want from them. You want them to "give back" the matter you have just taught, to satisfy yourself that you have achieved your object. If you have been teaching skills, this is easy enough; if knowledge, it is more difficult, since this is probably not the time for a full paper test. Chapter 5, Assimilation, deals more fully with the decision of when to hold your test, but at least you can ask a few leading questions and form an impression from the responses whether or not your lesson has succeeded. After that—the final summary. It should be short, including not more than three or four main points, and it must be crystal clear. If you have been teaching skills, the final testing practice will have done the work of a summary, and it only remains to summarize the class's progress and achievement during the lesson. Here, then, are two drills for ending a lesson, one for skills and one for knowledge; a lesson on techniques will probably demand a combination of the two.

SKILL	KNOWLEDGE
1. ANY QUESTIONS?	1. ANY QUESTIONS?
2. PRACTISE VITAL POINTS.	2. "I'LL ASK YOU SOME."
3. SUM UP PROGRESS AND ACHIEVEMENT.	3. FINAL SUMMARY.
4. COLLECT KIT.	4. FALL OUT.
5. FALL OUT.	

Now you are mentally prepared, but if your lesson teaches a skill or a technique it will probably include a demonstration. This may be a personal demonstration, such as loading a rifle, or it may be a bigger item such as the movement of a troop of tanks on the approach to contact. Whatever it may be, prepare it with the same conscientious attention that you gave to the mental preparation. To the class, a demonstration shows whether an instructor can only talk or whether he can actually do the job he is talking about. When you introduce a demonstration you are a showman, and every good showman knows that success depends upon thorough rehearsal.

If you have prepared your lesson well so far, you will have included every available training aid to improve your instruction. If a training aid is not available, don't be satisfied to do without. Given time you can improvise almost anything, from a blackboard to a section of a 36 grenade. Don't forget that the best visual aid is usually the THING ITSELF, and the best distribution is ONE PER MAN. This is the ideal, it will seldom be possible, but if you think ahead and liaise with other instructors you will come nearer the ideal than if you scrape up what you can five minutes before the period starts. In teaching a subject such as the operation of a wireless set, the value of the instruction bears a very close relation to the number of sets available. As we said before, in teaching skills and techniques the important thing is the MAXIMUM number of individual practices for the MAXIMUM length of time. Two sets for 20 men—bad. Four sets—better, twice as much practice possible. Ten sets—five times as good. Twenty sets—the ideal, ten times as good.

Give careful thought to the place of parade. Indoor parades usually have few alternative possibilities, but if your lesson is outdoors you may have a wide choice. First, decide what you want, then go and look for it. Is it quiet? Out of the wind? Will the sun be behind the class at the time the lesson is given? Are there any distractions, such as building under construction, or a stream of passers-by? Some of these are sure to be attractive girls, and a chance glimpse of a skirt can ruin the most impressive point in your lesson. Finally, are you sure no one else has chosen the same place as yourself?

Most instructors will gain benefit not only from a mental drill for preparation but also from a form on which they can set out their lesson-plan in black and white. Figure 6 is a specimen of a form for a Knowledge lesson. You can adapt it to meet your special needs. Figure 7 is a similar form filled in for a Skill lesson on door making.

LESSON PLAN

TITLE			
CLASS	No. IN CLASS	DRESS	
PLACE			
STORES			
	MATTER	TRAINING AIDS	TIME
HEAD	OBJECT REVISION PREVIEW TIE-IN REVISION		0
BODY			
TAIL	QUESTIONS FROM CLASS QUESTIONS TO CLASS FINAL SUMMARY		45

FIGURE 6

LESSON PLAN

TITLE : DOOR MAKING I (Battened Doors)			
CLASS	Squad "C."	No. in Class : 10.	DRESS : Denim.
PLACE	"A" Workshop.		
STORES	5 Benches and tools.	200 ft. of 6 ins. x 1 in. T. & G.	
	48 ft. of 8 in. x 1 $\frac{1}{2}$ ins. T. & G.	1 Cramp per bench.	
MATTER	SQUAD WORK	TRAINING AIDS	Time
OBJECT : DOOR MAKING. Stress importance in building trade. REVISION : Name elementary carpentry techniques that will be used. Test questions. TIE-IN : Outline next two lessons.			0
PHASE I. Explanation and demonstration. Selection of door boards. Give dimensions. Any questions? Sum up.	Squad select, mark and cut wood.	Good wood, Knotty wood and wood with heart shakes. All wood.	03
PHASE II. Explanation and demonstration (a) Selection of wood for battens. (b) Marking, dressing and bevelling battens. (c) Chamfering.	Good wood. Twisted wood. Batten, dressed and bevelled.	14	05
Any questions? Sum up.	Squad : (a) Select, mark and cut battens. (b) Dress and bevel battens. (c) Chamfer door boards.	All wood.	17
PHASE III. Explanation and demonstration (a) Cramping boards. (b) Marking off door width. (c) Jointing.	Door boards and Cramp.		27
Any questions? Sum up.	Squad : (a) Cramp boards. (b) Mark and cut off. (c) Joint.	All wood.	30
Discuss lesson. Stress achievement. Exhibit best work. Sum up. Pack up kit.			45

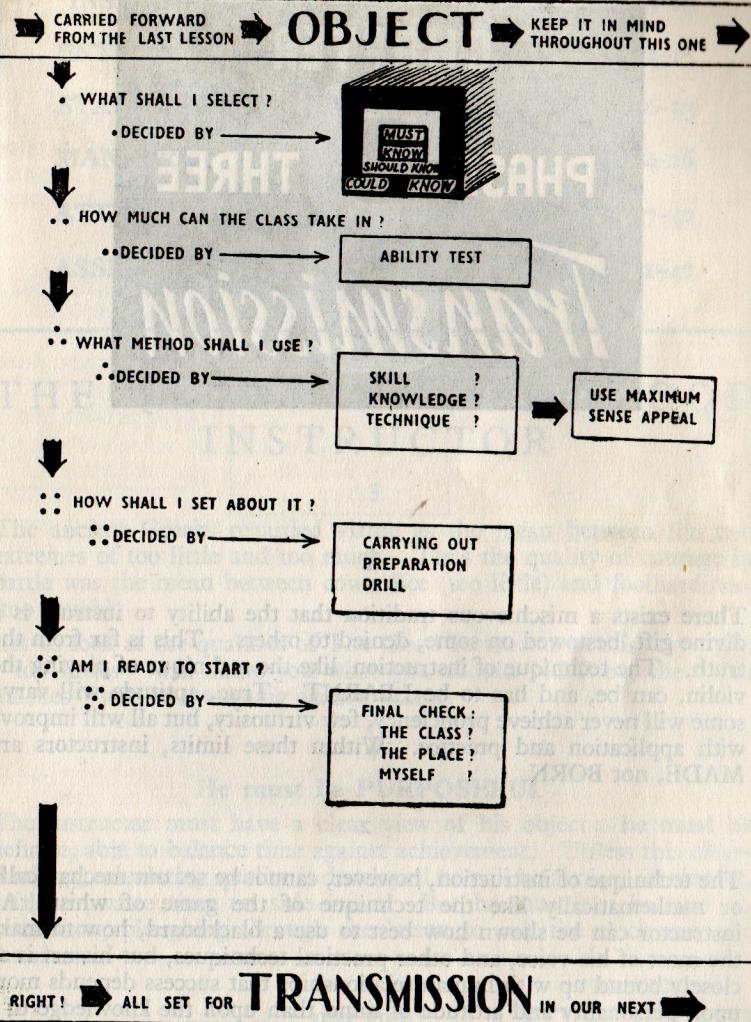
FIGURE 7

Before giving the lesson there are some final practical preparations which concern the class, the place of parade and yourself. First, the class. Do they know the exact time, place and dress for parade? Is there anything they must bring, such as pencils and notebooks? Next, the place of parade. Is it prepared? Clean and tidy? Suppose it rains? Are all the stores ready, in the right place, in working order? What arrangements have you made to get them back to store? What is the best formation for the class to adopt? Where will they sit or stand? Are the tables and chairs in the right place? Are there enough? Lastly, yourself. Have you allowed ten minutes for a final quiet run-through before starting? Will every man in the class be able to see your eyes? Will you be well lit? Are you smart? Do you need a haircut?

CONCLUSION

Oh yes, there is quite a lot in the preparation of a lesson . . . "all else being equal, the success of a lesson depends directly on the quality and the quantity of its preparation." . . . And good preparation will not only improve the lesson, it will improve you. If you lack anything of confidence, sound preparation is your first remedy. The good effect of a lesson well-prepared does not end with each lesson, it is cumulative, and each bout of good preparation extends your instructional powers towards the full development of your ability.

SUMMARY



CHAPTER PHASE 3 THREE *Transmission*

There exists a mischievous tradition that the ability to instruct is a divine gift, bestowed on some, denied to others. This is far from the truth. The technique of instruction, like the technique of playing the violin, can be, and has to be LEARNT. True, aptitude will vary; some will never achieve proficiency, few virtuosity, but all will improve with application and practice. Within these limits, instructors are MADE, not BORN.

2

The technique of instruction, however, cannot be set out mechanically or mathematically like the technique of the game of whist. An instructor can be shown how best to use a blackboard, how to make the most of his voice, and other practical techniques, but his art is so closely bound up with human relationships that success depends more upon personality and attitude of mind than upon the knowledge of a set of rules. The good instructor combines the best qualities of a salesman, a football coach, a production manager, a schoolteacher, a dramatist, a hot gospeller, a hero of the Boys' Own Paper, a showman, a father, a soldier and a friend. It is the object of this lesson to analyse more closely these qualities, to give some guidance on how they may be developed, and to catalogue some of the practical hints which aid the transmission of a lesson. Here is a preview:—

PREVIEW		Sections
THE QUALITIES OF THE GOOD INSTRUCTOR	...	3-13
ENTHUSIASM	..	14-15
STAGING AND PRESENTATION	..	16-23
MANNER	..	24-26
ATTITUDE	..	27-40
ASSESSMENT	..	41-47

THE QUALITIES OF A GOOD INSTRUCTOR

3

The ancient Greeks regarded virtue as the mean between the two extremes of too little and too much. Thus the quality of courage in battle was the mean between cowardice (too little) and foolhardiness (too much).

Let us look at the qualities of The Good Instructor in this way; the "too littles" will show you what you should NOT be, the "too muches" will be a warning against excess.

4

He must be PURPOSEFUL

The instructor must have a clear view of his object; he must be definite, able to balance time against achievement. Unless this clear-thinking, calculating quality is developed he will be aimless, irrelevant, liable to waste time on side issues. But he must not become an automaton, ploughing through the lesson to suit the clock and not the class.

TOO MUCH

JUST RIGHT

TOO LITTLE

AIMLESS.
DIGRESSIVE.
WITHOUT SENSE OF TIME.

PURPOSEFUL.
CLEAR OF OBJECT.
ABLE TO BALANCE TIME AGAINST ACHIEVEMENT.

ENSLAVED TO THE TIME-TABLE.

He must KNOW HIS STUFF

The instructor must have a thorough grasp of his subject ; his standard must be well above that of the class. In giving any demonstration he must be a high example of skill. Some techniques cannot be punched up in a few hours ; for instance, the best preparation for an instructor in tactics is six months battle experience. Expertness carries with it, however, certain dangers. The greatest scholars are not usually the best teachers, because they have lost touch with the difficulties of the plain man. The most highly skilled performers with a weapon often find it pleasant to display their skill to a gaping class, and demonstration tends towards showing off. Again, experience matures most men, but some of us enjoy telling travellers' tales.

TOO LITTLE
SKILL : UNCONVINCING
IN DEMONSTRATION.
KNOWLEDGE : KNOWING
THE BARE MINIMUM.
TECHNIQUE : RELIANT
ON BOOK KNOW-
LEDGE.

JUST RIGHT
S. SKILLED DEMON-
STRATOR.
K. KNOWING HIS
STUFF.
T. BACKED BY
PRACTICAL EX-
PERIENCE.

TOO MUCH
S. TENDING TO
SHOW OFF.
K. ACADEMIC AND
UNPRACTICAL.
T. PLAYING THE
TALKATIVE
VETERAN.

He must be PAINSTAKING

We saw in the last lesson the importance of preparation. Even if the instructor already has all the knowledge and skill necessary for his lesson, whether he has six years experience of instruction or six days there is no short cut through the preparation drill. He must choose the right method, arrange the material in phases and summaries, make ready every possible training aid and generally prepare his lesson as a bride prepares herself for her wedding. But he must not stick rigidly to his plan if it is unsuitable. Classes are like individuals, they react differently to the same lesson ; some may require more explanation on a certain point than others. If a class has been on an unexpected night-op a drastic change in the treatment of a lesson may be necessary. The instructor must be able to extemporize, to adapt his lesson to the mood and receptivity of the class.

TOO LITTLE
LAZY IN PREPARATION,
RESULTING IN WRONG
METHOD, FORMLESS
MUDDLED LESSON.

JUST RIGHT
INDUSTRIOUS IN PRE-
PARATION : MAXIMUM
SENSE-APPEAL, CLEAR-
CUT PHASES, SOUND
SUMMARIES.

TOO MUCH
ENTIRELY DEPENDENT
ON PREPARED PLAN.
UNADAPTABLE.

He must be ENTHUSIASTIC

Teaching is a vocation. A man who does not enjoy it may make himself a tolerable instructor through grim determination, but only the burning enthusiasm of the born teacher will put him in the top flight. His enthusiasm must, however, be balanced ; if he regards his own particular subject as the be-all and end-all of Army training, it has become a liability. It is worth noting that enthusiasm must be coupled with wit, intelligence and humour, otherwise the enthusiast becomes a bore.

TOO LITTLE APATHETIC. UNINTERESTED.	JUST RIGHT KEEN. ENTHUSIASTIC.	TOO MUCH UNBALANCED. FANATICAL. BORING.
---	--------------------------------------	--

He must have DRAMATIC SENSE

The presentation of a subject will benefit greatly if the instructor understands the relation of the dramatic sense to good instruction. This will be apparent in his sense of audience and sense of timing, by his use of variety, surprise, emotional and dramatic appeal to drive home his points, and by his ability to put across a good gag. These tricks of the trade can be a great help, but they must be used with good sense, or the performance will tend to take first place and the object of the lesson a bad second.

TOO LITTLE CONTENT WITH DULL, STODGY PRESENTA- TION.	JUST RIGHT AWARE OF THE DRAMATIC SENSE, AND ITS RELATION TO GOOD INSTRUCTION.	TOO MUCH PRODUCING SPLEN- DID PERFORMANCES. TEACHING LITTLE.
---	---	---

He must have a pleasing MANNER

By the word "manner" we mean the instructor's way of speaking, moving and gesturing during the lesson. His relations with the class we shall call his ATTITUDE. The instructor must speak clearly and distinctly, using proper emphasis. Nothing in his speech or action must jar on the class or distract their attention. It is not necessary, however, nor even desirable, that he should be a flowery orator. His job is to speak plain words to plain men.

TOO LITTLE FIDGETY, NERVOUS, WITH A JARRING VOICE OR AWKWARD GESTURES.	JUST RIGHT CONFIDENT AND EASY, WITH A PLEASANT VOICE AND THE ABILITY TO USE IT.	TOO MUCH STAGEY, PARLIAMEN- TARY OR "SOAP-BOX" IN MANNER.
--	---	--

He must have the right ATTITUDE to the class

The instructor's attitude to his class must be fair, firm and friendly. He must set an example of military bearing, soldierly conduct and personal integrity. At the same time, he must be approachable and sympathetic.



SUMMARY

11

RECIPE FOR A GOOD INSTRUCTOR

Take an exceptional amount of ENTHUSIASM and mix it with extraordinary INDUSTRY IN PREPARATION. To this mixture add sufficient sense of purpose to make it CLEAR OF OBJECT. Simmer gently, stirring in a good measure of KNOWLEDGE and EXPERIENCE. Add essence of DRAMATIC SENSE to ensure a spectacular appearance. Garnish with a PLEASING MANNER, to taste. Knead the mixture until it acquires a FAIR, FIRM AND FRIENDLY ATTITUDE and set it out to practise for three or four years.

12

So much for an analysis of the Good Instructor. You may well sit back and say: "So to reach his standard I need all these qualities? Well, I haven't got them. What do I do? Act as if I had?" There is no need to act, that will lead to certain disaster. No new instructor ever started with all these qualities fully developed; many will never develop some of them at all, but each man can at least make the most of himself. Plenty of one quality, such as enthusiasm, will redress weakness in another, such as lack of experience. Most of us are many-sided characters, our whole personality has within it much that is strong and much weak. The instructor must be aware of his strong points and exploit them to the full, whilst avoiding opportunities for his weak points to come to the fore. KNOW yourself, BE yourself, but be your BEST self.

Now for some practical advice on certain ways of developing your best self, but before we begin, look back through the qualities of the Good Instructor. You will note that the first three qualities of Purposefulness, Knowing Your Stuff and Industry in Planning have already been covered by the first two lessons, the Object and Preparation. The last four—Enthusiasm, Dramatic Sense, Manner and Attitude—are concerned in the business of Transmission, and we shall tackle them now.

ENTHUSIASM

14

Enthusiasm is as catching as boredom. It is the driving force of instruction; without it a lesson is dead. There is little advice to be given, for enthusiasm cannot be acquired at will. The lack of it, however, can be concealed, and it is here that you must be on your guard. In the course of his daily round the average instructor must handle some subjects which he finds uninteresting or even distasteful. If, by the slightest perceptible sign, you betray your lack of interest, you will do irreparable damage. The class take the lead from you, and, if you are bored, what hope for them? Have you ever heard this sort of thing?

- "Now, as you all know, we should be field-firing to-day, but since it is so wet we have stuck in three periods of revision on Gun Drill to smarten you up. . . ."
- "You will probably find this subject boring, but it's most important to every one of you. The first person I catch failing to pay attention will get into serious trouble. . . ."
- "The only way you can get this exercise to stop any sooner is by doing something right for a change. . . ."

Have you ever seen:

- A group of instructors "coffee-housing" during field training?
- Supernumerary or supervising instructors fidget or look bored while the class instructor was doing his best?
- A ten-minute break last for twenty?

If you can't appear genuinely interested, at least you can conceal your boredom.

So much for too little enthusiasm ; now for too much. Instructors who are very enthusiastic about their subject are apt to over-emphasize its importance. In certain specialized lines, such as Camouflage, Gas, Battle Drill and Weapon Training there has often been a tendency to treat the subject as an end in itself instead of as a component part of a soldier's battle training. The object of gas training is to save casualties **UNDER BATTLE CONDITIONS**, not to evolve an immaculate drill under training conditions. The object of Weapon training is to kill the enemy **UNDER BATTLE CONDITIONS**, not to strip a gun in three minutes on the barrack square. The relevant pamphlets put the subject in its true perspective ; take your line from them. Again, there is no point in making extravagant claims for your particular pet. A 4.2-inch mortar is NOT a better weapon than a 25-pr gun ; each has its individual merits. A mess-tin will NOT cook as good a meal as a 72-inch range, but it is more convenient to carry about.

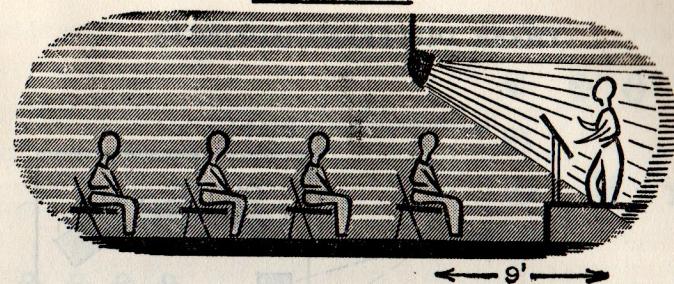
STAGING AND PRESENTATION

From the moment the instructor steps in front of his class until he dismisses it, he must regard his lesson as a "performance", in the stage sense. It will be a performance in which the audience must take an active part it is true, but nevertheless, he must consider the setting, the timing, and the presentation of his lesson in the same way as the producer considers the production of a play. Both must be well rehearsed, slick, and run without a hitch. Have you ever been to the cinema when the machine kept breaking down? Even the best film loses its interest under those conditions.

First, the staging. The instructor must be SEEN and HEARD. You may think that is too simple to bother about, but a check of experienced instructors in an instructional establishment showed that in twenty periods of indoor instruction an average of 12 per cent of the class could not see and 7 per cent could not comfortably hear the instructor. Outdoor instruction multiplies these figures. The ideal position for the instructor is on a stage or mound ; the lower he stands in relation to the class, the further away they must be. If a short man wanted to attract attention at a football match, he would run out on to the pitch, not stand in the crowd. The light should shine on the instructor, away from the class.

EXAMPLES

INDOORS



FIGURE

OUTDOORS



FIGURE 1

Unless they are very tired and tend to be sleepy, the audience are slightly more receptive in a semi-darkened hall with a well-lit stage. Figure 10 gives some standard examples of layout for indoor instruction.

SAME CLASS—SAME CLASSROOM

Instructions

THREE DIFFERENT SUBJECTS

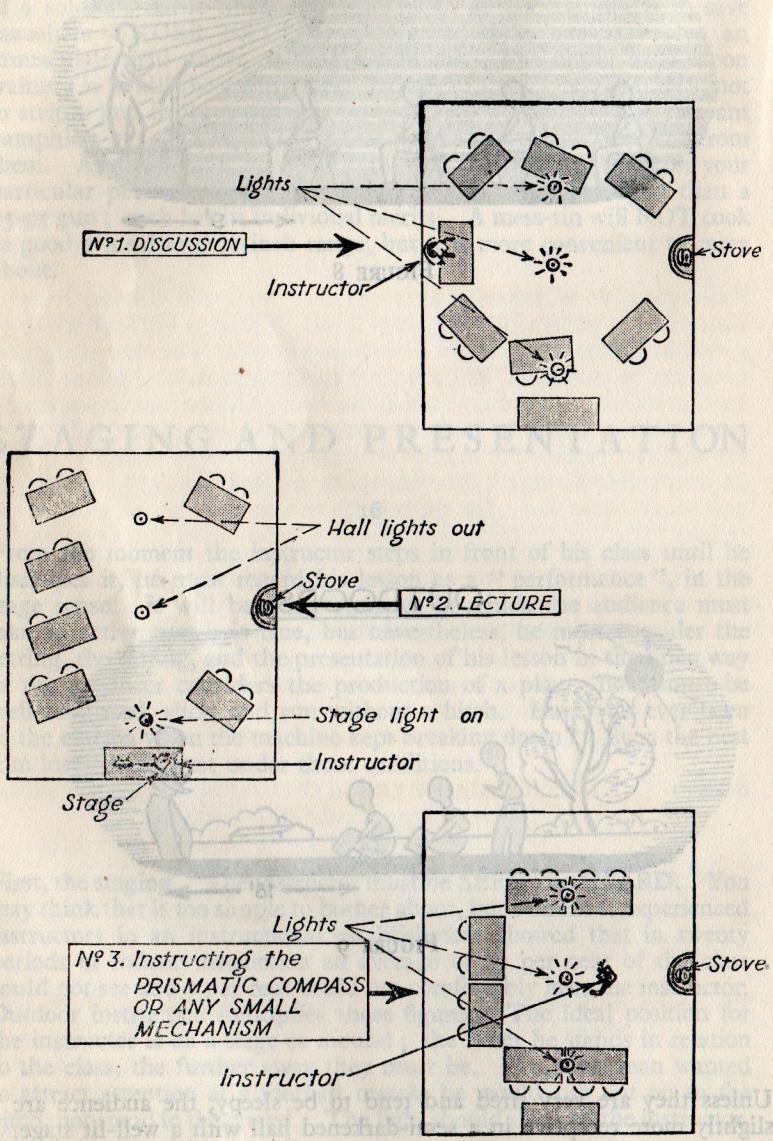


FIGURE 10

When you are teaching a standing squad outdoors, it will often be

worth while to "turn the corners."

EXAMPLE

THIS

OR THIS

OR THIS



← WIND

FIGURE 11

If you are holding an outdoor tactical demonstration where you have to give signals to your demonstration squad, arrange for an assistant to stand behind the audience (he can be one of the class) with the signal apparatus. You can give him his cues by signs which will be unnoticed by the class, such as scratching your head or blowing your nose. Arrange for the fatigue-man to acknowledge his signal. Consider the difference between these two little scenes.

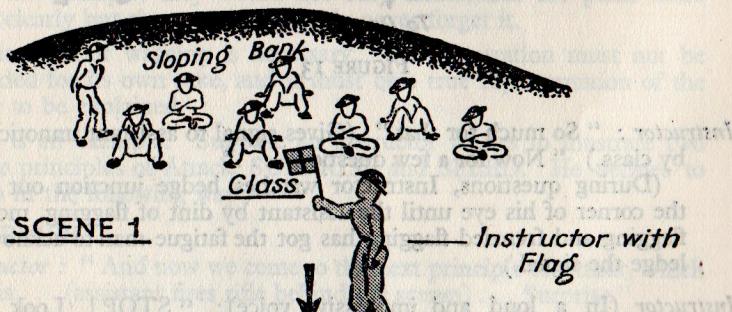


FIGURE 12

Instructor : "So much for that. Now look at the hedge junction everybody." (Waves flag. Class's attention divided between hedge junction and instructor's flag-technique.) PAUSE.

Instructor : "Just keep watching that hedge junction. Something's going to happen any minute now." (More flagging.) PAUSE.

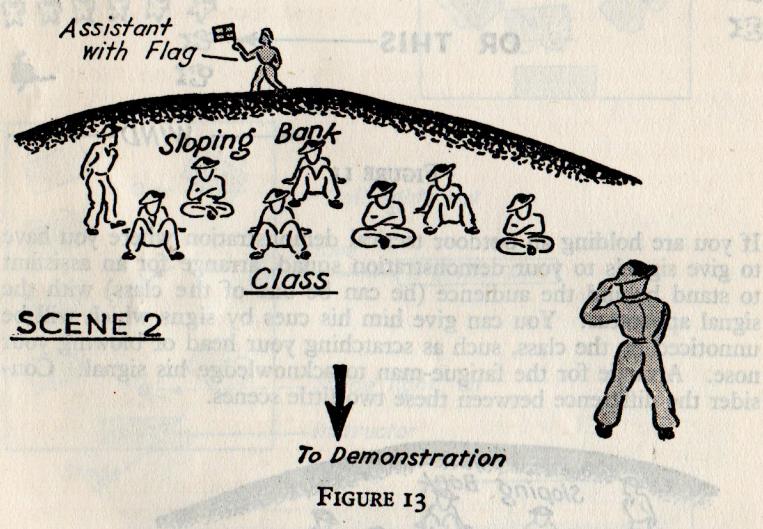
(The watch on the hedge junction slackens. Frenzied flagging.)

Instructor : "He's gone to sleep. Jones, run out to that hedge junction and wake up the fatigue-man." (Faces class.)

"Now there should have been some smoke from that hedge junction. What do you think that would have meant?"

Smith : "There's some smoke coming from that hedge junction now, Serjeant."

Instructor (gratified) : "Ah! So there is. Now what do you think . . ."



Instructor : "So much for that." (Gives signal to assistant unnoticed by class.) "Now for a few questions . . ."

(During questions, Instructor watches hedge junction out of the corner of his eye until the assistant by dint of flagging, more flagging and frenzied flagging has got the fatigue-man to acknowledge the signal.)

Instructor (In a loud and impressive voice) : "STOP! Look at the hedge junction." (The class, mystified, all look at the hedge junction. As if by magic, a wisp of smoke appears.)

Instructor : "What do you think that means—Jones?"

There is the difference between good and bad presentation, and the same principle applies throughout all instruction; present the class with a slick smooth-running show, don't let them hear the wheels grinding.

In Chapter 4—Reception, we shall deal fully with the importance of interesting the class. One way of ensuring interest is by introducing drama, variety, and surprise into the presentation of your lessons.

- Variety is achieved by any change in your method of instruction, such as the introduction of visual aids in a lecture, or of a 2-minute demonstration with live ammunition in the middle of a Weapon Training lesson. Even two instructors teaching by dialogue or taking alternate 10-minute spells of straight instruction is preferable to a monologue. Practice as well as explanation needs variation. If the class is learning to receive code signals, try varying the strength of reception, introducing interference, making them omit every second word or only take words beginning with a consonant. It all helps to break monotony, which is a sure road to boredom.
- • Surprise is a method of forcibly awakening flagging attention. A member of the class can be prompted beforehand to spring up and ask a pertinent or even an impertinent question. Everyone will listen to the answer. Even a rifle-shot at the back of the hall can be salutary in a sleepy after-lunch period, but this is a last resort.
- • • Dramatic and visual presentation can teach a point as no amount of talking can ever hope to do. Suppose you wanted to teach a class the lesson in the last paragraph—that slick and polished presentation is vital to the lesson. If you repeated that sentence, elaborated on it, explained the reasons and gave examples, how much would the class remember in three weeks time? Very little, but if you presented a 2-minute playlet, as sketched out in the example, they would not only understand the point more clearly but they would probably never forget it.

One word of warning is necessary. The illustration must not be included for its own sake, and it must be a true representation of the point to be explained.

Here is an example. Suppose an instructor wishes to illustrate two of the principles of Attack, SURPRISE and SPEED. He decides to do so in the following way:—

SURPRISE

Instructor : "And now we come to the next principle of Attack, which is . . . (assistant fires rifle behind the scenes) . . . Surprise."

SPEED

A poster or epidiascope card, for example, a man being chased by a bull.

These are both superficial illustrations. How much better to do it this way :—

SURPRISE

Instructor : "The next principle is Surprise." Assistant comes on to stage and makes as if to fire a rifle. The class is tense awaiting the report. Pause. Suddenly there is a much louder bang from the back of the hall. "You see, the enemy probably knows the attack is coming, but he wonders WHERE, WHEN and HOW STRONG. That is how the element of surprise is achieved."

SPEED

A short playlet set in a teashop. Customer enters, calls for tea in a hurry. Waiter brings tea, cup, spoon, sugar, etc., making a hurried journey for each one.

Second customer enters and orders tea. Second waiter places complete tray, already laid, in front of him.

Instructor : "Speed in attack is not achieved by troops running into battle, but by forethought, planning ahead and anticipation."

These examples point the difference between illustrating the SURFACE MEANING and the FULL MILITARY SIGNIFICANCE of a word.

20

The construction and design of posters, epidiascope cards, etc., are discussed in Part 2, Chapter 5, but no matter how well made, they must also be well handled during the lesson or they will lose much of their value.

A visual aid must be presented at just the right moment, time allowed for its assimilation, and then, unless it is wanted for continual reference, it should be covered up again. An easy way to achieve this is to have two curtains behind the lecturer with an easel behind each. While he is talking an assistant can change the boards or posters on the easels.

Here is the layout :—

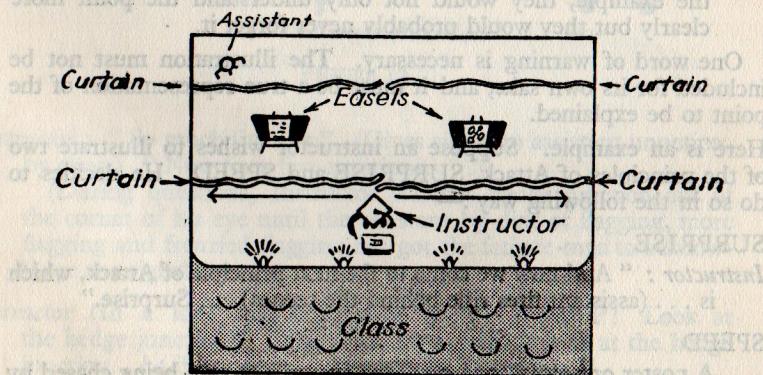


FIGURE 14

Another method is to have the posters or boards arranged in order on an open easel with a black cloth over the topmost. Again, if the poster or the board itself has a series of diagrams or statements on it, these should be covered by strips of paper which can be easily torn off at the right moment. The object of these precautions is to ensure that the attention of the class is focused on only one thing at a time. It is worth making sure that there are no permanent posters in the classroom, within view of the class. These will help to distract wavering attention. A pointer is essential; one with an illuminated tip is especially useful.

21

The first rule about a blackboard is that it should be black. If paint is scarce, Indian ink will do the job. Sometimes you will want to present a blackboard with a summary or a diagram ready drawn, and in this case you can prepare your blackboard beforehand. But often the design must be built step by step during the lesson. When you use the board, observe the following rules :—

1. If you are right-handed, have the blackboard placed on your left-hand side.
2. When you are going to draw, STOP TALKING.
3. Stand facing the board and write with your right elbow held well up. In diagrams, draw your strokes from left to right and from top to bottom.
4. Stand clear of the board.
5. Carry on talking.

Do not use dark-coloured chalk on a blackboard. This sounds common sense, but it is also a common mistake. Yellow is the best colour, then white, pink, red, green, blue, brown, purple, in that order.

If you are a poor performer with chalk, try drawing your diagrams carefully before the period; run a pencil over the chalk lines and rub the board clean. You will find that by following the pencil lines you will be able to re-draw your diagram during the lesson in a most professional manner.

Finally, a blackboard need not be a thing 48 ins by 30 ins that you put on an easel. You can make a serviceable Squad-board by painting a piece of 3-ply wood 20 ins by 20 ins. This is often invaluable for outdoor training. At a pinch, a newspaper pinned to a wall will do good service, provided that you use dark chalks.

22

One of the essentials of a good play is a telling first and last line. So with instruction it is probably worth while to memorize the first and last paragraphs of your lesson. Start punctually, with a bang, and finish dead on time. Every minute the class waits before you start puts them in a less receptive frame of mind; every minute you extend over the scheduled time they will become more impatient. This is

especially true if your lesson is the period before a meal and if there is a clock facing the class.

23

A sense of "Audience" and timing comes only with experience. You have all heard in the cinema an actor lose half his lines in the laughter and applause of the audience. But a live actor playing to a live audience will wait for the applause to die down before he speaks his next line. It is the same with other processes, for example, if you tell a keen class some striking new fact, their brains will be busy marvelling at it and turning it over for some seconds. If you go too quickly they will miss part of the next sentence. Let each item sink in. A way to achieve this is to repeat the same fact in different ways, perhaps giving examples. When you want to be particularly impressive, as for instance in giving summaries, speak very slowly, pausing between each sentence. Just as machines have gauges and indicators to show how things are going on inside, so every man in the class has a dial which indicates how your lesson is being assimilated. Watch the faces of your men; you can read from them whether your lesson is geared too high or too low.

MANNER

24

But you can't stare at them fixedly all the time. If you look at the ground or the sky, however, you deliberately break the circuit that makes contact between you and your class. The power of the human eye is no unfounded myth. You must strike a middle course between staring fixedly at one man and letting your eyes rove aimlessly over the whole room. In a classroom a useful tip is to pick a point in the centre of the back wall a few feet above the heads of the class and to use it as a homing-station for your eyes. At times, of course, for instance when you ask a question, you must look at individuals, but by looking above the centre of the class for the majority of the lesson you can make each man in the class feel that you are talking to him individually and giving the lesson for his particular benefit.

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When we stand up to address a body of men we usually assume a manner of speech different from that of our everyday conversation. We speak louder, more slowly, and use fewer colloquial words. There is a great art in speaking well: if your delivery is poor, here are some hints which may help you.

• Speak SLOWLY

If you are apt to run your words and sentences together, try counting to yourself ONE—stop—TWO at the end of each sentence and ONE stop after each important word. A little private practice will soon space out your speech.

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• • Don't be afraid to PAUSE

If you are stuck for a word or run yourself into a verbal tangle, stop dead, pause, think out what you want to say, and say it again slowly from the beginning. Always THINK before you start a sentence. This will save you from getting muddled, from saying things that you don't really mean and from using meaningless time-filling words such as "Er. . . . Well now. . . . Right now. . . ." A pause made with deliberation and confidence passes unnoticed by the audience and raises the expectancy.

• • • Be SIMPLE

How often have you heard this sort of thing:—

" . . . This projectile will penetrate the protective plating of any known armoured vehicle."

(Translation: "This shell will go through the armour of any known tank.")

" . . . Elevate the sleeve to an equivalent altitude."

(Translation: "Raise the sleeve to the same height.")

" . . . Advance the muzzle until there is a clear projection."

(Translation: "Push the rifle forward until it sticks out.")

And so on. . . . It is true that every form of specialized training has its own jargon which must be used by the instructor and class, but difficult words should be introduced gently at first, and always avoided when a simpler word will serve. Do not use difficult words just to impress the class; they will respect you more for clarity and simplicity.

• • Use EMPHASIS, avoid monotony

If your voice is apt to drone at a set pitch, it becomes monotonous. To avoid this, read aloud a sentence from a newspaper, thinking what each word means before you speak and emphasizing it properly when you do.

Practise this until it sounds natural to an unprejudiced listener, then apply it to the delivery of your lessons.

• •

• • Avoid OUTWORN TAGS

"What we are going on with now. . . ."

"Next we come to our old friend. . . ."

These phrases have been used so often that they register no meaning to the class. A succession of clichés will lull them to sleep, unless they are betting on the frequency of their appearance.

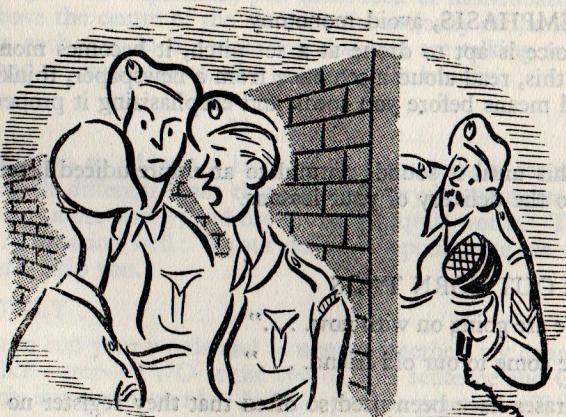
45

So long as his appearance is soldierly, and so long as he avoids any mannerism which will distract the class's attention, the way an instructor stands and moves during his lesson is not vitally important. True, the assured gestures and movement of a trained actor are an undoubtedly asset, but an attempt to acquire them in a short time will make most soldiers embarrassed and self-conscious. On the minus side, nervous habits, such as throwing up a piece of chalk, tapping with a cane, or fidgeting with dress or equipment, will irritate the class and lessen their receptivity. On the plus side, however, gestures are a luxury, and unless they come naturally it is best to forget about them. The instructor's stance should be poised but not rigid. If you are embarrassed by your hands, put one behind your back and let the other hang by your side.

ATTITUDE

27

The attitude of an instructor towards his class decides whether the process of learning is to be a combined operation, an uneasy alliance or a state of armed neutrality. Have you heard a class discussing their instructor? If there were an invisible microphone which recorded their remarks as they relaxed after each lesson, the instructor would learn a lot. Let us imagine we have such a microphone and study this question of Attitude in the light of what it has recorded.



"That question of Scottie's fairly floored him."

"It didn't half. He got properly tied up when he tried to talk himself out of it. Scottie knew more about it than he did himself."

Never bluff. We have already stressed the importance of knowing your stuff, but if you don't know the answer to a question, admit it. Promise to find the information before the next period, and, immediately you have dismissed the class, go and look it up and remember to let the class know the answer.

"That bit about the attack he led on the farm was interesting, wasn't it?"

"Wasn't half. Wonder if that was where he got his DSO?"

"Dunno. He's the sort I'd like to have as a Company Officer if there were any scrapping."

The ultimate value of all you teach is tested on the battlefield. If you have passed that test yourself with honours, you will start with a bonus of prestige in the eyes of the class. Do not let modesty interfere with your use of personal battle experiences to illustrate whatever you may be instructing; you will gain respect as long as you use your experience sensibly; you will lose it as soon as the class scent that you are drawing the long bow.

"Don't know how he can lecture like that after last night."

"Why? Was he at the same old game again?"

"He certainly was. Ought to know better at his age."

We saw in the first chapter the importance of character development in all training. One of the most powerful means of improving character is by force of example. If your leadership dominates the class they will imitate your behaviour and attitude down to the smallest detail. Especially if it is early in their training, they will regard you not only as a source of knowledge, but as a pattern of what a soldier should be. This throws a great responsibility upon the instructor; he must set an example of smartness, efficiency and of all the soldierly qualities, and he must set an example of character as well.

"Did you ever hear an instructor tell a story like that one?"

"Why shouldn't he tell it? He doesn't put on airs like some of them. Just talks to us as if we were his pals."

"I dunno. That story seemed a bit out of place to me."

If you have been selected to be an instructor, you must have some natural dignity that makes it possible for you to address a squad of men from a slightly higher level than the average. Don't throw this advantage away by currying favour from the class. The seeds of familiarity are sown early, and once they have taken root it is impossible to choke them. Remain at a friendly distance from the class, never enter into any argument with them, avoid using their nicknames or christian names on or off parade, and generally beware of saying anything that will identify you with individuals or groups in the class. It is particularly worth noting that any gross obscenity, especially when introduced to amuse the class or to show what a good fellow you are, will inevitably lead to familiarity and loss of respect.

"Fancy the officer stopping Sgt. Stoop's lesson twice!"

"Didn't seem to think much of it, did he?"

It is easy to gain momentary importance by disparaging other instructors. When supervising junior instructors, never speak to them in a way that the class might interpret as a "rocket." Similarly, never speak slightly of any instructor, senior or junior, behind his back. A blow dealt at any one instructor does not stop there; ultimately it lessens the standing of the whole corps of instructors in the eyes of the class. Instructors can give each other mutual aid by unswerving loyalty at all times.

"Do you notice the way Sgt. Stewer always picks Johnston out to answer questions?"

"Him and Randall's teacher's pets all right."

"Did you see the way he put them on as soon as the CO came round?"

The clever and the stupid must each receive a square deal at your hands. Favouritism forfeits respect. You must be fair in other ways too, don't try to blame the class for your mistakes in instruction. When a senior officer visits you, give a fair and honest picture of your methods and achievement. An attempt to bluff may succeed with him, but it won't fool the class.

"We got old Smithy well away on Combined Ops that period."

"Just as well. I hadn't prepared the electricity lesson at all."

The instructor must know his own mind and impose his will upon the class. He must never be led off the trail by cunningly disguised red herrings ; he must never allow any slackness or slovenliness to pass unchecked. The good instructor achieves this result by leadership, but occasions will arise when the best of instructors and the keenest of classes have different ideas of when a day's work should end, or how much clearing up is necessary after the lesson. At such times discipline is more important than cordial relations. The instructor will gain the respect of his class by his firmness, and, when they review the incident in retrospect they will generally have to agree that he was right.

"Oh, he's a good instructor, all right, but I can't say I like him."

"He's never been known to speak to a single student off parade except to bawl him out."

"Has about as much interest in us as if we were sausages going through a machine."

The emphasis on Example and Firmness does not mean that you should be an unapproachable prig or a feared tyrant. On the contrary, a warm and understanding human being can achieve the distance of respect and still be regarded as a good friend by his class. Every man must feel that you are always his friend, even when you are checking him. Do not allow any men to appear ridiculous yourself, and check the class if they show any tendency to jeer at a bad performance. . . . "It's all very well laughing at Smith, but he can make all of you look pretty silly when it comes to Gun Drill. . . ."

"I have to laugh when I think of Sjt. Stripes taking off the awkward gun number."

"He's a treat, isn't he? Never laughs himself, or makes any of those sloppy wisecracks."

The effective use of humour will enlist at once the goodwill of the class. In times of stress it is an oil to lubricate any friction between instructor and class, in happier conditions will cement their relationship, and in periods of apathy it can be an alarm clock to arouse their slumbering attention. But it must "come off." The humorist whose joke falls flat looks as silly as a burst balloon. Even when successful, humour is a two-edged weapon. Too much laughter will detract from receptivity ; the class will be looking for something to laugh at rather than something to learn. We have all seen the exaggerated type of "wrong way" demonstration where the characters' behaviour is more reminiscent of the music hall stage than of real-life soldiering. This is often not instructional at all. Yet even a period which is funny for the sake of being funny has its uses. It can sweeten up a disgruntled class, it can relax men when they are bored or stale, in times of stringent discipline it can show that even instructors are human. But there must be no illusion about its lack of instructional value.

Some instructors strive to register a laugh as a football team strives to score a goal. This is the wrong outlook ; humour should be introduced casually, as a natural expression of the instructor's personality. Since personalities vary so greatly, it is hard to generalize, but it is safe to say that pretentious humour, such as the set-piece wisecrack, is more often out of place than a casual brand of dry humour. Only tell a funny story when it contributes directly towards the understanding or retention of the point you are teaching. Finally, humour is not an essential ingredient of instructional technique. It is a luxury, and if it does not come to you naturally, forget it, and be yourself.

"Bit hard on old Joe, wasn't he?"

"I'll say. Not that Joe isn't pretty awful. What was it he called him? Oh, yes, a rickety cab-horse. Funny thing, that's just what he did look like, come to think of it."

Never go for a cheap laugh by being sarcastic. A man who has been made to look ridiculous will never forgive you. Don't allow yourself to become exasperated or impatient ; show an even front to all members of the class at all times.

"What did the serjeant want you for?"
 "Said he would help me to punch up to-morrow's lesson after tea."
 "Blimey! In his free time? That's more than most chaps would do."

A man is always flattered by any personal attention to himself. If you can find out which members of your class are good at other subjects and show that you know it, you will win those men outright.

"Here, Jones, you are the crack shot of this squad. Show us how to adopt the lying position. . . ."
 "Now, Smith, you came out top of the Map Reading Test, you be the platoon guide. . . ."

But do not forget the rear-rank soldiers. One most valuable tip is to arrange extra instruction for the plodders in off-parade hours. Then you can find out their difficulties at their own speed without wasting the time of the rest of the class.

"Always the same with the CSM. Nothing we do in his squad ever seems right for him."
 "Every class he takes, it's the worst he's ever seen."

Which will get better results, praise or blame? Periods which are calculated to instil discipline have a technique of their own, but when you are instructing knowledge, facts and skills, there is no advantage to be gained from blaming a class because they won't try or can't learn. The fault is usually yours. Except for slackness or breaches of discipline, a censorious attitude will open a breach between the instructor and class.

"... The next man I catch failing to pay attention will be put on a charge. . . ."

"... You will never understand this mechanism until you try, and you are not going to leave this room until you understand it. . . ."

"... You're the worst man in the squad, and you may as well know it. . . ."

This attitude is scarcely calculated to secure goodwill and co-operation. You will, on the other hand, achieve the most startling results by discriminate praise. "Discriminate" is the operative word; praise must be sparingly applied, carefully graduated and, whenever possible, individually bestowed. The phrase, "Well done, that man" will soon fall on deaf ears, but everyone will be agog for a verdict which ranges from "That's a little better, Jenkins" to "Jenkins, that was a damn good piece of work." It is important to learn the names of your class at once and always to address a man by name. There is all the difference in the world between being called "No. 3 of the rear rank" and "Johnstone."

So much for the Attitude of the instructor; its effect on the class's receptivity will be discussed more fully in the next lesson. If you review the last few pages you will find that the secret of success is for you to put yourself in the student's shoes and to see and feel through his senses. If you have a good knowledge of human nature and if you have learnt this trick of seeing through the eyes of the class, your Attitude will look after itself.

Finally, it is a mistake to think that attitude and manner are stable things. They should change to suit every type of class and subject. There is a great difference between the treatment of a class of recruits learning the first lesson on the rifle and a squad of old soldiers going over the assault course.

ATTITUDE GUIDE IN TWELVE WORDS

SET AN EXAMPLE

BE $\left\{ \begin{array}{l} \text{FAIR} \\ \text{FIRM} \\ \text{FRIENDLY} \end{array} \right.$

SEE THROUGH THE CLASS'S EYES.

ASSESSMENT

41

One of the best ways of improving the standard of Attitude and Manner amongst instructors is by mutual criticism. There are two ways in which you can do this. The first is to act as critic yourself. Drop in to watch your fellow instructors as often as you can, note their weak and their strong points, match them against your own performance, and act on the result. The second is by getting another instructor to watch you during a lesson and later to ask him for a frank but friendly criticism.

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Unfortunately, however, many people have not got the critical faculty well developed ; their opinions will be vague and perhaps concerned with details rather than essentials. Good criticism demands a methodical technique. It also requires some yardstick against which to measure the instructor's performance, otherwise much energy will be wasted in deciding the relative importance of the factors of good instruction and how one instructor's performance can fairly be measured against another. Also, since we have not the gift of seeing ourselves as others see us, we shall probably be surprised, and perhaps a little hurt by some of the criticisms. With personal vanity involved, and with only the critic's opinion against our own, the situation is ripe for argument, leading to open disagreement.

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All these difficulties can be avoided by the use of an assessment form which is accepted by all instructors. Once the form has gained his confidence, it is surprising how an instructor will accept as incontrovertible evidence an assessment form filled in by a person whose verbal opinion he would not have considered. The type of assessment form must be adapted to suit individual methods of instruction. Here is one that has proved successful in assessing a lecture :—

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LECTURE ASSESSMENT FORM

FACTUAL LECTURE

Did the Instructor :—		Yes (+2)	On the whole Yes (+1)	50/50 (0)	On the whole No (-1)	No (-2)
O	1. Keep the object in mind and go for it without digressing ?					
P	2. Know his stuff ? Plan the lesson well with good sequences, summaries, etc. ?					
P	3. Prepare good training aids and use them well ?					
T	4. Have a good manner ? (Delivery, voice, gestures).					
T	5. Have an attitude suitable for the subject and the class ? (Fair, firm, friendly?)					

Did the class :—

R	6. Show interest and keenness throughout the lesson ?				
R	7. As far as possible participate in the lesson and have to use their own brains?				
A	8. Seem to assimilate the lesson up to the required standard ?				

Lecture	+TOTAL	-TOTAL
Lecturer		
Assessor	SUM TOTAL	

FIGURE 15

55

This form is so simple that it explains itself. Go into the lecture with a blank form and a blank piece of paper. As the lecture progresses, jot down on the piece of paper any evidence of good or bad preparation, convincing or awkward manner, etc., grouped roughly in subjects under the eight headings of the form. In the last ten minutes, review the evidence and answer the questions on the form. If your answer is a straight Yes or No, put a X in the $+2$ or -2 column, if it is a qualified Yes or No put the X in the $+1$ or -1 column, and if the answer is undecided put it in the centre column. Total the plus and minus figures, subtract the smaller from the larger, and the resulting figure will show your opinion of the instructor's success.

It will be noted that the first five questions cover the instructor's performance, and if the answer to all of these questions be Yes or No then the answer to the last three will very likely be Yes or No as well. This is not always true, however, because exceptional brilliance or exceptional ineptitude in one of the first five divisions may well counter-balance the total results of the other four. Thus an instructor might get $+2$ for questions 1, 2, 3 and 5 and yet have such a poor delivery that all his good work was wasted. Since the proof of the teaching is in the learning, the answers to the last three questions are the acid test of the instructor's success, and they form a bonus or penalty which will balance out any exceptional quality not given its due weight in the first part. Thus a fair and equitable total mark is assured.

44

But do not imagine that this type of assessment is a magic formula which will grade instructors as a butcher grades pigs. If ten individuals assessed the same lecturer of average ability, it is possible, in fact likely, that their totals would range from -4 to $+6$. There is no need to lose confidence in the form because of this. The reason for the differing totals is that EACH CRITIC HAS HIS OWN STANDARD. First of all, he must apply the form some six or seven times before he reaches a constant standard of his own. The "nought" figure in the centre column represents his idea of an average instructor, and this will vary with the general standard in his unit, his own ability, the degree of his conceit or humility, etc., etc. Only when assessment is carried out by a committee will a reliable standard be reached, but although different individuals will not produce the same totals for the same instructors they will, if they are reasonable critics, produce roughly the same RELATIVE totals.

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Suppose there are three critics, Smith, Smart and Stumble, who assess three instructors, Goodfellow, Oddfellow and Dumbfellow. Smith is an average steady sensible chap, Smart is an excellent instructor and very critical of others, Stumble is a poor instructor who imagines everyone else to be far better than he. The results of their assessment might look something like this:—

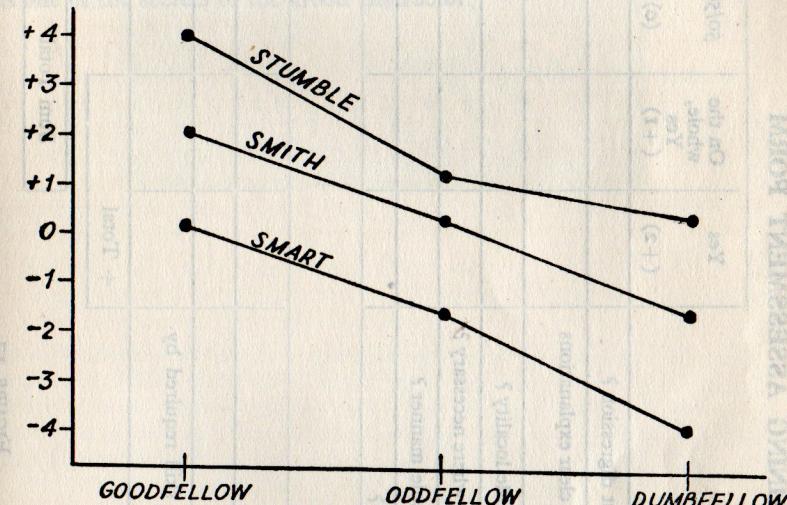


FIGURE 16.

Each has his own standard, so that the INDIVIDUAL marks are different, but each is a good enough critic to keep his standard constant, so that the RELATIVE marks are roughly the same.

46

An example of how easily the form can be adapted to specific requirements can be seen in this example of a WEAPON TRAINING ASSESSMENT FORM.

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57

WEAPON TRAINING ASSESSMENT FORM

DID THE INSTRUCTOR—

		Yes (+2)	No (0)	On the whole, Yes (+1)	No (-1)	No (-2)
O	1. Know the object, and go for it without digression? 2. Have a good lesson lay-out, with brief, clear explanations and demonstrations?					
P	3. Arrange for sufficient kit, and a suitable locality? 4. Have diagrams and training aids for use where necessary?					
T	5. Deliver the lesson well and in a suitable manner? 6. Have a fair, firm and friendly attitude?					

DID THE CLASS—

FIGURE 17

So there are the important facts about transmission. An instructor cannot improve his personal qualities, his manner and his attitude by a few hours of concentrated swotting, but rather by keeping an alert and open mind, by submitting himself to relentless self-criticism, by giving receptive attention to the criticism of others, by studying the reactions and feelings of his classes, by continual striving towards a better performance and finally by practice, practice and more practice. In the end it is experience, not only of instructing, but of men that will ensure the all-important relationship between teacher and learner which is one of the secrets of the Good Instructor.

CHAPTER PHASE 4 FOUR *Reception*

I
Learning and teaching usually go together. Of the two, learning is by far the more important, for, if he wants to do so, a man can learn a great deal without any teacher. The teacher is only an aid to the willing pupil, he arranges things to make learning as easy as possible. We have seen in the first three lessons how he can do this by knowing the Object, by careful Preparation and by good Transmission.

But what about the unwilling pupil? The teacher's first job is to **MAKE HIM WANT TO LEARN**. Only then can he go on to the second job of making learning easy, for a man cannot be forced to learn, he can only do so voluntarily. This process of making a man want to learn, or giving him motives for learning is called **MOTIVATION**. In this lesson we shall see how willing reception can be achieved by **MOTIVATION**.

**POINT ONE: LEARNING IS A VOLUNTARY PROCESS.
TO WANT TO LEARN IS TO BE MOTIVATED.**

2

This lesson is based on a twelve-point plan, the first of which you have just seen. The remaining eleven points will appear under the following subject-headings:—

PREVIEW

	Sections
INTEREST AND ATTENTION	3-6
CURIOSITY	7
REALISM	8-11
PURPOSE	12-13
RWARD AND PUNISHMENT	14
COMPETITION	15-19
PROGRESS AND ACHIEVEMENT	20-23
CLASS ACTIVITY	24-26
CLASS COMFORT	27-30
SUMMARY	31

INTEREST AND ATTENTION

3

Interest and attention are basic to learning; to have interest and attention is the same thing as to be motivated.

Imagine that a professor of botany went out for a country walk with his young son and daughter. If you examined all three on their return, what would you find they had learnt? The professor would have noted various wild flowers and remembered their names and locations, the son might have learnt the name and type of every aeroplane and motor car he had seen, the girl might have learnt nothing at all. Why should this be? Each learnt differently because their interest lay in different directions and they only paid attention to the subject that interested them. The girl had no interest on a country walk, she learnt nothing at all. But suppose that during the walk they had seen a house on fire, that would have been sufficiently striking to interest them all, all three would have paid attention and on examination after the walk, would have remembered considerable detail about the fire.

**POINT TWO: TO HAVE INTEREST AND ATTENTION
IS TO BE MOTIVATED.**

4

Similarly, some subjects in training are sufficiently striking to catch the interest and attention of the whole class, others will only interest a few. The first good demonstration of weapons being fired, or an account of an exciting action in battle, are easy subjects for the instructor to handle because interest and attention are centred on them without having to be stimulated. The vast majority of subjects, however, will not prove interesting to the whole class for long, and then the instructor has to use his art to **MAKE** them interesting.

**POINT THREE: SOMETIMES THE SUBJECT IS INTERESTING IN ITSELF. SOMETIMES INTEREST
MUST BE AROUSED BY THE ART OF THE
INSTRUCTOR.**

There is an interesting way and a dull way of doing everything. Everyone has had the experience of hearing the same story repeated by two different people ; told by one it was roaringly funny, told by the other it fell flat. Or to take another example, imagine a dusty old book of essays, eight hundred pages long, the cover drab and clumsy, the print small, the margin narrow and the pages spotted with mildew. An enterprising publisher decides to reprint one of the essays as a slim illustrated booklet. He prints it on glossy paper in bold type, he spaces the letterpress widely and leaves broad margins. In its old form it would have repelled the casual reader ; in its new edition it wheedles him on and holds his attention by the attraction of its illustrations and layout.

The instructor can exploit the interesting aspects of his subject ; he can also present the duller parts in ways that will make them SEEM interesting. Various methods of doing this were discussed in Chapter 2—Preparation, where we saw the value of drama, surprise and variety, and in Chapter 3—Transmission, where the importance of good staging and presentation was explained.

CURIOSITY

Curiosity may kill cats, but it keeps classes alive. Curiosity is behind the success of the mystery play, the Whodunit, the Radio Quiz and the crossword puzzle. You too can exploit curiosity. A class will make their brains work feverishly to find the answer to a puzzle, whereas if you had told them the answer as a straight fact it might not have registered at all.

● An instructor holds up a curious piece of mechanism. "Can anyone tell me how this works ?" No, they can't, but they will enjoy puzzling it out step by step ; they would have been bored by a straight explanation . . .

●● There is a blackboard on the stage with a blank strip of paper pinned on it. Two letters can be seen running out on one side. Every man in the class will speculate what that word will be . . .

●●● In a period of Military Law, the rules of evidence, the instructor opens the lesson :—

"Within the last four days, one man in this class whipped an oilbottle, the property of one of his comrades, from one of the barrack rooms. By the end of this period I shall be able to prove conclusively which man is the culprit."

Except for his prepared assistants, half the class is hoping it is not them ; the other half are wondering whether he really means what he says. How will he prove it ? What is he up to ? Attention and interest are secured.

POINT FOUR : CURIOSITY AROUSES INTEREST.

REALISM

Another way of holding interest and attention is to make your instruction as real as possible. Consider the difference between hearing a friend's account of a film and seeing the film yourself. Do not repeat anything to the class if you can let them see or hear the real thing.

BAD	"When the gun fires, there is a recoil of eighteen inches."
GOOD	"Watch the gun fire. You will see there is a recoil of eighteen inches."
BAD	"A bullet fired from a long range makes a whistle instead of a crack."
GOOD	"Listen to this one. What is the difference . . . Jones ?"
BAD	"When you depress the clutch pedal, the clutch plates disengage."
GOOD	"Right. Step on the pedal now, Jones. All watch the clutch. What's happening . . . Smith ?"

Tactical exercises benefit especially from realism ; no umpire can paint a picture of enemy fire as well as half a dozen sticks of gelignite can. But even without the help of real shells, real guns and real tanks there is still much the instructor can do by making the situation seem real through imaginative umpiring.

BAD	"You are under heavy fire, Cpl Smith."
GOOD	"Two shells just by that hedge, Cpl Smith. There's another ! Jones is hit. Another by the haystack ! . . ."
BAD	"You are pinned down by fire from AFVs."
GOOD	"Look at that small tree ! There's a tank hull-down behind it ! There's a puff of smoke . . . He's shooting at you ! . . ."

Even the instruction of Administration can be helped by introducing realism. If you are teaching the class how to use certain forms, split them into two halves, paint a situation to one half who then fill in the forms and hand them over to the other half who, as recipients, have to act on them.

If you are teaching book-keeping, make the class play the parts of wholesalers, retailers and customers, and stage transactions to be entered in their ledgers.

Realism should run through all an instructor's teaching ; but it is especially important in asking questions and in setting tests. Avoid the academic approach, eg :—

BAD "What is the minimum range of the 3-inch mortar ?"

GOOD "There is your target. Can you hit it ?"

If this advice is followed faithfully, many more tests will be carried out "on the job" than in the lecture room, which is just as it should be.

POINT FIVE : REALISM HOLDS INTEREST.

PURPOSE

One of the basic motives which make a man want to learn a thing is a clear realization of the personal importance to himself of learning it. There is a good reason for every bit of training the class undergoes ; men are reasonable creatures, so if that reason is explained carefully to them they will generally accept it. A man, very sensibly, will not exert himself to learn anything unless he does believe it to be important. If you doubt this fact, think of a game of whist. After the first six tricks have been taken, every player knows how many kings, queens and aces are still to be played, but are they so sure about the twos, threes and fours ? The small cards are just as easy to see, but they are not so important.

It is easy for the student to see why some subjects are important. He must be able to handle his weapons or he will not kill the enemy, he must know how to dig a shell-scrape or he will be killed himself. These are two of the most obvious and useful motives for training. But the reasons for drill parades, spit and polish, route marches and educational training are not so readily understood, and it is worth while going to a considerable amount of trouble to convince your class that they have in fact an important purpose. If ever the instructor senses that the class are saying to themselves "What good is all this stuff to me ?" he must first pause and ask himself whether or not it is in fact any good to them, and if he convinces himself that it is, he must then convince the class as well before they will be in a mood to learn. One of the most difficult types of men to motivate is the "old soldier" with battle experience. His complacency must be shattered before he will believe that he has anything left to learn, and the best way to achieve this is by a searching initial test.

POINT SIX : A MAN WILL BE MOTIVATED BY REALIZING THE PERSONAL IMPORTANCE OF LEARNING.

REWARD AND PUNISHMENT

Perhaps reward and punishment are amongst the oldest ways in the world of inducing a man to do what he does not want to do. In military instruction the reward for good learning may be increased pay or promotion, and the penalty CB or extra fatigues. More often, however, they take the form of praise or a bawling out. In Chapter 3, Transmission, it was stated that praise was more effective than blame. This is generally true, because praise pleases a man and makes him like instruction, blame mortifies or annoys him and makes him dislike it. It must be remembered, however, that each man requires individual treatment. The desire to please those whom he likes is deep-seated in most men's character, hence the effect of the instructor's praise will be in direct ratio to the student's respect and liking for him.

POINT SEVEN : A MAN CAN BE MOTIVATED BY REWARD AND PUNISHMENT. REWARD IS THE BETTER METHOD.

COMPETITION

The spirit of competition or rivalry is another great motivating force. Human beings are competitive creatures, ready to contend that their country, their football team, their village band, their gardens or their own performances are better than the next man's. There is almost no limit to the scope of exploiting this competitive spirit in training. The most successful form is group competition, between classes, platoons, batteries or commands, because this has the additional advantage of raising the *esprit de corps* and group morale.

Competition between groups can make men perform voluntarily prodigies of hard dull work. Suppose you ordered your squad to spend three hours after parade cleaning their kit. If there was no apparent motive for it, your order would be unpopular to say the least of it. But suppose your squad looked like winning the inter-unit drill competition. It is quite possible they would spend that amount of time on their kit without even being asked to do so.

Set-piece competitions should be carefully organized, scrupulously fair, and built up into something of an event. The presence of spectators, civilian or military, is a great help towards achieving the atmosphere of a big occasion. As the competition progresses the results should be posted up in such a way that everyone can see them. Shooting, sport and drill lend themselves to this treatment readily, but a good competition can be organized in almost any subject. In 1943 an Infantry

battalion resting after a long spell in the line arranged an inter-platoon competitive league covering no fewer than seventeen separate subjects, which included such unlikely items as Slit-Trench Digging, Field Cooking, Field Hygiene and Platoon Administration. Not only did the league teach a great deal, it was enjoyed by everyone and its effect on morale was electric.

18

Apart from set-piece competitions, the spirit of rivalry can easily be introduced into everyday instruction. One of the simplest methods is by splitting the class into halves, each side prepares a dozen questions, and then they shoot them at each other in turn. Allot marks for questions correctly answered and act as referee yourself. When instructing on guns, tanks and similar equipment you can usually make your crew-team the competitive unit and often keep it unchanged throughout a whole course.

19

Competition between individuals must be handled more carefully. The bright men will usually come out on top and will tend towards complacency. The dull ones will usually come out bottom and will tend to become depressed. Rivalry soon evaporates if the range of performance is too great, and to avoid this it is often advisable to grade classes by ability, putting all the bright men into one squad, average men into the second and dull men into the third. This method is discussed more fully in Part 2, but it is worth noting now that, contrary to the general impression, there is no evidence that the bright men in a squad help their weaker brethren by their example. In fact, they depress them by the contrast.

This system of grading by ability can only be applied, of course, in the early stages of training, before men have taken their place in their final sub-unit.

POINT EIGHT: A MAN CAN BE MOTIVATED BY THE COMPETITIVE SPIRIT.

PROGRESS & ACHIEVEMENT

20

Achievement is another aspect of competition. Instead of competing against others, a man competes against some fixed goal or standard. In military training, standard tests of ability and proficiency form these goals. Every man wants to succeed; if you can tie learning up with the idea of success or failure, you will have hitched it to a motive of universal appeal. Achievement in itself however is not enough. As soon as a student has reached one goal you must pop up another one just out of reach, and as he passes these successive objectives your student will feel a sense of progress. This sense of progress is vital to the success of all training; as we have already seen there is perhaps no single factor that "browns off" a squad more quickly than the feeling of "the same old stuff again."

21

You may say that if training is well carried out a man is bound to progress. This is a very different thing, however, from the student FEELING a sense of progress, for a man frequently improves without knowing it. Anyone who has had his right arm in a sling will remember his first fumbling efforts to dress himself with his left hand. A week or two later he suddenly realizes that he has become quite adept. Until that sudden realization, his progress was unconscious. If the student's progress is slow and laborious, frequently he actually believes that he is getting worse. Therefore it is most important to stress the progress achieved in each period. Go out of your way to point out any little advance the class has made, show their performance in the best possible light. If they are in a trough of depression you can even set your tests in such a way that the class will score highly and feel that they are better than they thought. Scores ranging from 55 to 85 per cent will graduate the class just as well as those ranging from 15 to 45 per cent and they are much better for morale. The most definite proof of improvement is to set the same test before and after a piece of instruction, progress can then be gauged in hard figures.

22

The bigger picture of progress should be shown as well. If your course runs for three weeks, make a big pictorial representation of it, perhaps as a racecourse with each item of instruction forming an obstacle. Each day mark up the students' progress over the obstacles. Citizens were stimulated to greater efforts in the Savings Campaign by target boards displayed in the market places; a board in the unit lines will have the same effects on your students.

Generalized indications of progress, however, are not enough, for they do not take count of each individual. A system of Progress Reporting, as described in Part 2 of this pamphlet is the ideal way of informing each man just how he stands. Men always work better if they know the results of their efforts, even if they are disappointing. This is strikingly illustrated in the following diagram of two groups of students who were learning mental multiplication. Group one were kept constantly informed of their results and at each practice tried to beat their previous score. Group two were not told their results at all. At the tenth practice the conditions were reversed. Group two were told, Group one were not.

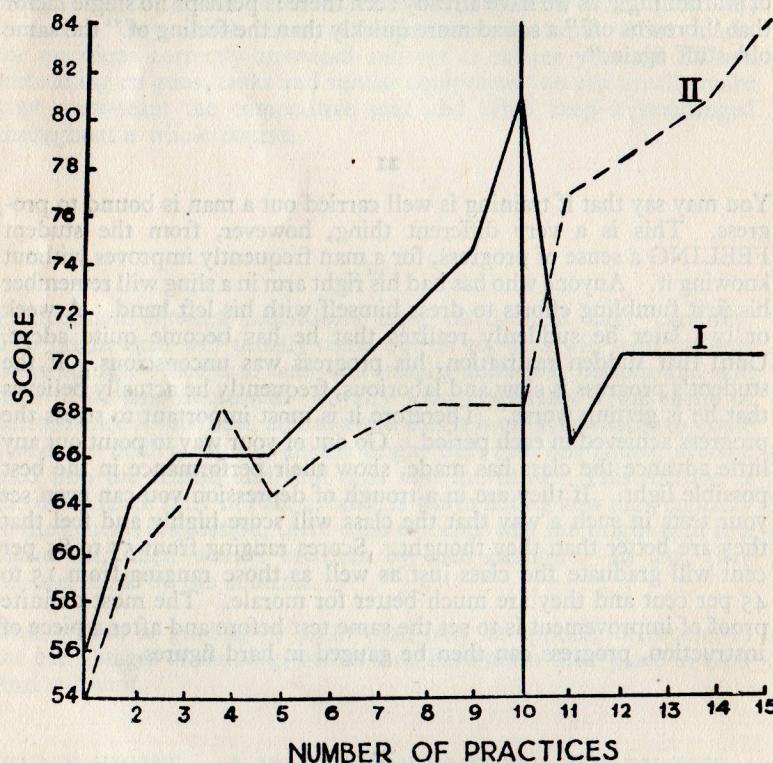


FIGURE 18.

POINT NINE: A MAN CAN BE MOTIVATED BY A SENSE OF ACHIEVEMENT AND PROGRESS.

CLASS ACTIVITY

If the class are allowed to take an active part in a lesson they will show more inclination to learn. An analogy from the nursery will show how this comes about. If you build brick castles to amuse children you may hold their attention for some little time, but soon there will be cries of "Let *ME* . . ." and as soon as each one has his own little pile the cry will change into "Look at *MINE*." If a man has a chance to display his personal ability in front of the class his pride and vanity make him want to do well. If he knows that he will be called on to speak or perform, it will give him a motive for listening to the instructor's previous explanation or demonstration.

Later we shall see how far the effect of making a class participate and think things out for themselves will aid the actual process of learning and remembering, here we are only concerned with its use as an incentive.

Most of us are individualists, and often a man will learn best if he is allowed to find his own way of learning. If your subject allows for this latitude, you will find that the class will identify themselves with the success of the lesson, and every lesson well learnt will be one up to them. This method, however, demands intelligent men and suitable subjects. For instance:—

"Here is a new weapon. Take it away and study it. In half an hour I am going to ask one of you to explain how it works."

"Here are all the necessary pamphlets. In twenty minutes' time I am going to ask one of you to explain the principles of this electric circuit to the rest of the class."

This method has the additional advantage of arousing rivalry and curiosity.

Now it is obvious that the larger the class the smaller the chance of individual participation. Secondly, it was made clear in Chapter 2—Preparation, that in learning skills or techniques the maximum amount of individual practice is essential. Thirdly, the system of "O" Groups and of command throughout the Army is based on the fact that one leader cannot control individually more than 8 to 10 men. The same is true of instruction, where individual attention is necessary the maximum class is ten men. The larger the class, the more "one-way" becomes the instruction. When classes reach fifty and a hundred, instruction becomes mass production. This may be quite satisfactory for teaching knowledge, but the most individual types of instruction in skills and techniques, such as learning to shoot on the range, are ideally taught to a class of one man. Generally speaking then, the smaller the class the better the reception.

POINT TEN: CLASS ACTIVITY IS AN AID TO MOTIVATION.

CLASS COMFORT

27

Motivation is affected by many outside conditions ; it is linked very closely with the general morale of the class. No class will want to learn if they have missed breakfast or if they have to stand in a cold wind. The keenest student may have an off-day as a result of bad news from home. This is no place to run through all the factors affecting morale, but the instructor must always think of class conditions and class comfort to ensure that he keeps it as high as possible.

POINT ELEVEN: MOTIVATION IS LINKED WITH MORALE.

28

Here are some of the more important items of class-comfort :—

INDOORS

• LIGHTING

Can all the class see well ? Does the shadow fall on the right side for writing ?

•• SEATING

Has the class plenty of elbow room ? Are the seats comfortable ? Can a forward rest be supplied in the shape of a table, or a backrest in the shape of a wall ?

••• WARMTH

Are there draughts ? Is the ventilation good ? Will the stove be lit well before the period ? Are the seats so arranged that the maximum number get direct benefit from the stove ?

OUTDOORS

• LIGHT

Is the sun behind the class ?

•• REST

Is the class standing up when it might be sitting down ? Are your locations so arranged that they will cut out unnecessary walking ?

••• WARMTH

Is the class in the warmest/driest/coolest place you can find ? Would the lesson be better indoors ?

•• EQUIPMENT

Is the class suitably clothed ? (Balaclavas ? Gloves ? Jackets off ?) Are they wearing or carrying unnecessary equipment ?

GENERAL

- Have the class had time to carry out their natural functions after breakfast ?
- Is there any objection to the class smoking ?
- Can you fit in an unexpected cup of tea ? An unexpected truck to take them home ?

70

29

Training in discipline and character qualities, of course, such as drill, endurance tests, and assault courses demand intentional discomfort for the class. Or again, a student may have reached the stage of being tested under active service conditions. There is no objection to such an exercise taking place in a gale of sleet, in fact, such a thing is positively desirable. Some instructors have defended the initial teaching of weapon training outdoors in arctic conditions because it "toughens 'em up." Such an attitude is quite mistaken ; the teaching of a technical subject demands the maximum class comfort. In cold conditions the will to learn will be replaced by the wish to get warm. Toughen them up by all means, but devise a separate exercise for it.

30

This does not mean that the class should be pampered ; such things as smoking, free and easy dress, etc., must be regulated with good sense and discipline, but any hardship imposed on them must be the result of the instructor's deliberate judgment, not his lack of thought.

POINT TWELVE: MORALE IS LINKED WITH CLASS-COMFORT.

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SUMMARY

THE TWELVE POINTS OF RECEPTION

1. LEARNING IS A VOLUNTARY PROCESS.
TO WANT TO LEARN IS TO BE MOTIVATED.
2. TO HAVE INTEREST AND ATTENTION IS TO BE MOTIVATED.
3. SOMETIMES THE SUBJECT IS INTERESTING IN ITSELF; SOMETIMES INTEREST MUST BE AROUSED BY THE ART OF THE INSTRUCTOR.
4. CURIOSITY AROUSES INTEREST.
5. REALISM HOLDS INTEREST.
6. A MAN WILL BE MOTIVATED BY REALIZING THE PERSONAL IMPORTANCE OF LEARNING.
7. A MAN CAN BE MOTIVATED BY REWARD AND PUNISHMENT. REWARD IS THE BETTER METHOD.
8. A MAN CAN BE MOTIVATED BY THE COMPETITIVE SPIRIT.
9. A MAN CAN BE MOTIVATED BY A SENSE OF ACHIEVEMENT AND PROGRESS.
10. CLASS ACTIVITY IS AN AID TO MOTIVATION.
11. MOTIVATION IS LINKED WITH MORALE.
12. MORALE IS LINKED WITH CLASS-COMFORT.

CHAPTER 5

PHASE FIVE

Assimilation

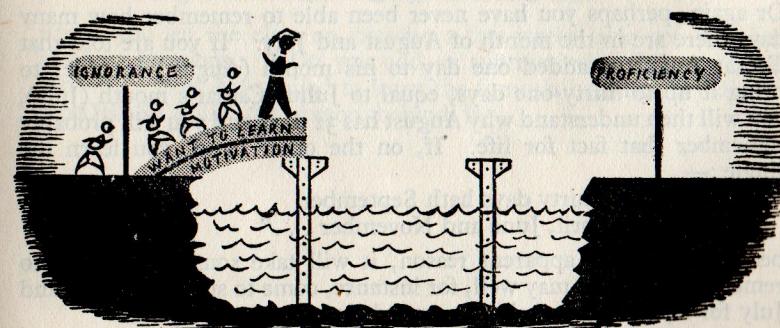
The three stages in bridging the gap between Ignorance and Proficiency are :—

WANT TO LEARN

LEARN

REMEMBER

In the last lesson we saw how to motivate the student, or make him want to learn ; in this one we shall study the processes of learning and remembering, which can be lumped together under the label of ASSIMILATION.



Here is a preview of the lesson :—

PREVIEW	Sections
THE NATURE OF LEARNING	3-24
QUESTION TECHNIQUE	25-32
TESTING	33-44
REVISION	45-46

THE NATURE OF LEARNING

Assimilation implies that superficial learning is not enough ; learning must be retained if it is to be of value. We have all had the experience of swotting up a subject for an examination. As soon as the examination is over we make no further effort to remember what we have learnt, and in a few weeks it slips away and is forgotten. Military instruction is not in this category. Seldom, if ever, is a man "crammed" in order to have his ability tested. The vast majority of what he learns must be kept clear in his mind, ready for instant use when he requires it. How can learning be made to stick ?

First by understanding, which is the greatest of all aids to learning. Suppose you had to learn a sentence by heart. In English it would be easy, because you would understand what every word meant. In Italian it would be more difficult, because, although you might recognize some of the word-stems, the grammar and syntax would be unintelligible. In Japanese it would be very difficult indeed, because you would have to learn a set of meaningless symbols and sounds. Or again, perhaps you have never been able to remember how many days there are in the month of August and July. If you are told that Caesar Augustus added one day to his month (August) in order to bring it up to thirty-one days, equal to Julius Caesar's month (July), you will then understand why August has 31 days and you will probably remember that fact for life. If, on the other hand, you learn the jingle :—

"Thirty days hath September,
April, June and November . . ."

because it has no apparent reason, it will take some little effort to remember it. You may well, for instance, come to substitute May and July for April and June in the second line.

In the bad old days, the multiplication table was taught in school by chanting in chorus :—

" Two times two make four,
Two times three make six,
Two times four make eight . . ."

and so on until twelve times twelve made one hundred and forty-four. Compare that method with the modern one of first explaining the table thus :—

$$\begin{array}{r}
 2 & & 2 & & 2 \\
 2 & & 2 & & 2 \\
 \hline
 4 & & 2 & & 2 \\
 & & \hline
 6 & & 2 & & 2 \\
 & & \hline
 8
 \end{array}$$

and then going on to memorize the results. The old method was bad because, since the class were given no explanation, they could not understand why 2×3 made six. It was, therefore, difficult to learn ; learning depended, not on understanding, but on a parrot-like repetition of meaningless sounds. Again, if a pupil forgot what two times three made, there was no way of working out the result by a process of reasoning.

Apply this example to Military Map Reading. If in teaching back-bearing, you make the class learn the formula :—

If less than 180° add 180°

If more than 180° subtract 180°

it is so simple that they will soon have it by heart. Then, if you go on to teach them how to apply it by rule of thumb, you may think that you have taught them back-bearings in record time.

But if you set the class an exercise a few weeks later you will hear anxious questions : " Do you add or subtract when it's more than 180° ? " They have failed to learn the formula because they did not UNDERSTAND the reason behind it.

7
A better way to teach back-bearings is to start by explaining these two diagrams by easy stages :—

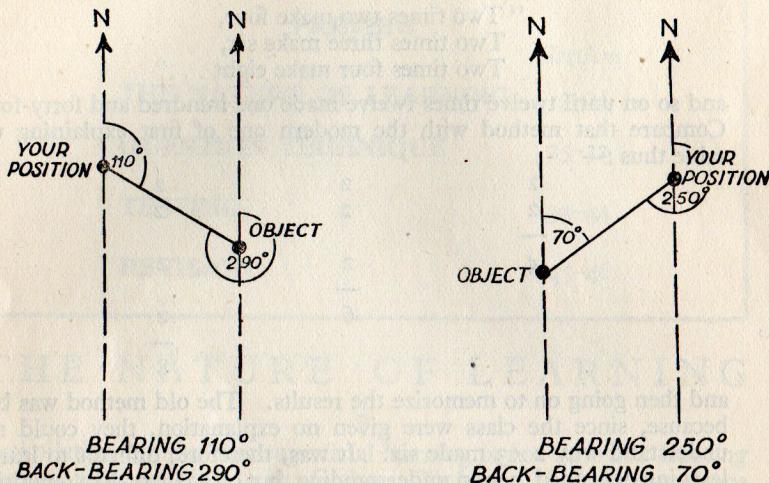


FIGURE 19.

When all variations of these diagrams are thoroughly understood, then you can teach the formula as a short cut. This time on your exercise; no one will have forgotten the formula, because he understands the reasons behind it. If it does not come readily to mind, the student can always work it out for himself.

8

Sometimes the process of reaching understanding is slow and laborious. If you read through a sentence in a foreign language, at first it may make no sense at all. After looking up one or two words in a dictionary you may catch the general meaning, and piece by piece you can work out the significance of each phrase and word. This can be compared to a jig-saw puzzle ; the complete picture is not revealed until the last piece is in place.

But understanding may come in a sudden flash. Suppose a man wonders why his girl is cold to him. One day he sees her kissing another man as though she meant it. Straightway he has learnt the answer. This is comparable to a riddle over which you may puzzle for some time without making any progress ; then, suddenly, the answer comes in a flash of insight.

9

The instructor's job is to use all his powers to help the class to reach the point of insight or understanding as quickly as possible. He must use the best approach by teaching through the senses, he must mass

all the evidence that will help them, he must lead them from one clearly understood fact to the next. Suppose he is up against some knotty point such as the explanation of the differential gear. If he uses the right method, and every member of the class can see a working model, the brighter members will understand it for themselves. For those who are still puzzled, however, he must devise as many easy approaches as he can think of and repeat his explanation in different ways until everyone has reached the goal of understanding.

10

Repetition in itself, however, does not ensure understanding ; it only provides an opportunity. For instance, a schoolboy may confuse the words "principle" and "principal." He is made to write out each fifty times. If he does it mechanically it is possible that a week later he will still make the same mistake. But suppose, as he wrote the word "principle" for the forty-eighth time, he noticed the LE at the end of the word was identical to the LE at the end of the word "Rule." From that time on he would always remember that "principle" meaning "rule" ended in LE. Repetition gave him that chance of learning.

But if repetition includes enough different explanations, the chance of reaching understanding becomes almost a certainty. Every man will find at least one of the roads which he can follow. Suppose you are teaching a class Map Reading. If you state once that gradient equals $\frac{VI}{HE}$ only one or two will understand what you mean. If you repeat it four times slowly, perhaps a quarter of the class will understand. If you repeat it a hundred times, still only perhaps a third will understand ; insight and understanding have not been reached by repetition alone. But if you repeat it six times in different ways, showing diagrams and giving examples, the whole class will learn the formula.

11

Although understanding can be reached by explanation, the surest way of remembering anything is to work it out for yourself. If the action of the four-stroke engine is explained to you, although you may understand it at the time, after a short period some of the links in the chain of learning may grow hazy, and there will be a gap in your memory which no amount of effort can fill. If, however, you have been forced to reason out the process for yourself, even if you cannot remember it at once, you can GO THROUGH THE SAME PROCESS AGAIN. Here, then, is the greatest argument for class-participation and for the Question-and-Answer method of instruction.

12

Although this method has the prime advantage of teaching knowledge in a memorable form, it must be handled with care. Here is an example of its proper use :—

"Where does the gas go then . . . Smith?"

"Through the gas regulator, Sergeant."

"What forced it out . . . Jones?"

"The explosion of the charge, Sergeant."

"What does it do then . . . Brown?"

"Goes through the gas passage, Sergeant."

"And then . . . Roberts?"

"Into the gas cylinder, Sergeant."

"What happens next . . . McKay?"

"It hits the piston head, Sergeant."

So far, we have established that the gas is forced out of the barrel by the explosion of the charge, and passes through the gas regulator and gas vent into the cylinder where it strikes the piston head. It has been a slower process than explanation, but it has been worth while, for the class were working out a LOGICAL PROCESS.
But what about this?

13

"What do tanks run on . . . Jones?"

"On roads, Sergeant."

"Yes, very good, but anything else . . . Smith?"

"Fields, Sergeant."

"Yes, good, but what do they run on roads and fields on . . . Brown?"

"Petrol, Sergeant."

"Yes, but what do they run ON . . . Roberts?"

"Caterpillars, Sergeant."

"Good. What is another name for caterpillars . . . Anyone?"

"Butterflies . . . Grubs . . ."

"Try it another way. What do athletes train on . . . McKay?"

"Steak, Sergeant."

"Yes, but what do they use to run their races on . . . Jones?"

"Spikes, Sergeant."

"What do cattle make across fields . . . Smith?"

"Paths, Sergeant."

"What does a tiger make in the jungle . . . Anyone?"

"Footprints . . . Roaring . . . Tracks."

"TRACKS! The tracks of any known AFV will be demolished by this grenade."

Or even suppose it comes off:—

"What holds bricks together . . . Smith?"

"Mortar, Sergeant."

"Right! This is a 2-inch Mortar . . ."

14

This use of Question-and-Answer technique is entirely mistaken. The class are playing a guessing game; they are not using their sense of reason at all. When the answer to a question is a matter of KNOWLEDGE which the class cannot be expected to know, it is best

to save time by telling them. Q-and-A needs practice before it can be used with a large class, and, of all forms of instruction, it especially demands graded ability. If the class is uneven, the bright will be too impatient, or the dull too harassed. Wisely used, however, that is when the instructor asks only such questions as can be answered from common-sense, everyday knowledge and certainly ascertained technical knowledge, this method is invaluable.

15

Sometimes, of course, there are no reasons to be understood, and then learning has to be by rote. There is no reason why there should be twelve inches in a foot, twenty-eight days in February, or different genders for French nouns. It is just so, and we have to learn as best we can. Staff officers, orderly room clerks and certain specialists in the Army have to remember a great deal by rote, such as War Establishments, the number and dates of ACIs and the references of files, but most NCOs and men do not need so much of this type of learning. This is just as well, because they will not remember it. Here again we see the importance of asking yourself before starting to prepare a lesson, "MUST they know this?" and when you are teaching this factual type of knowledge it is also wise to ask, "Is there any hope of their remembering this?" Unless knowledge is memorable, it is wiser to hand it to the class in the form of notes, précis or pamphlets.

16

But, since some rote learning is essential, the next problem is how to make it memorable. First, it is often best to let a student carry out rote learning for himself by a method called Sweat-and-Test. By this method he is handed his task and told to take it away and learn it in preparation for a test. When the test takes place only those that reach a certain high percentage are passed. The remainder continue to be tested at intervals of two or three days until all have reached the required standard. This method may sound elementary and old-fashioned, but it is effective in that each student has learnt it by his own efforts in the way easiest to himself. It is only suited, of course, to intelligent classes and to subjects of pure factual knowledge, such as organizations, establishments, etc., which require little or no explanation.

17

Secondly, if there is no reason on which to base the memory of facts, try to supply an artificial reason by PUTTING SENSE INTO NONSENSE. A recruit will not find it easy to understand the sequence of a fire order:—

FIRST The number of the section to whom the order is addressed.

SECOND The range in yards.

THIRD A description of the target.

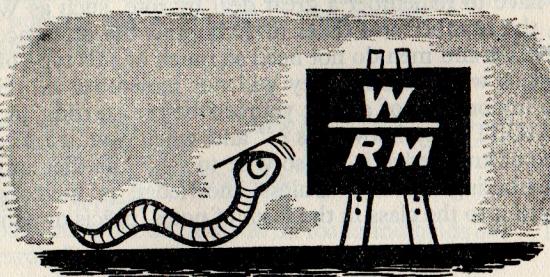
FOURTH How many rounds are to be fired.

FIFTH Whether fire is to be rapid, deliberate, etc.

Some unknown genius of the past put sense into that apparently nonsensical sequence by inventing the classic word DRINK—Designation, Range, Indication, Number of rounds, Kind of fire ; and now the sequence of the fire order is one of the most memorable pieces of learning known to the Army, as an examination of any group of soldiers will prove.

Similarly, a formula used by American gunners during the last war ran : Width of the target in yards over range in yards times width of target in mils. This is not easily memorable.

But if the soldier is told to remember it by the word WORM, Width Over Range times Mils it becomes immediately memorable.



18

Key words are not the only way of putting sense into nonsense, there are rhymes, jingles, opposites, jokes, and puns. These should only be used with discretion when no real sense can be given to fix facts in the memory, and sometimes they will go wrong. A man found it difficult to remember the name of an acquaintance called Cummick. To aid his memory he associated the name with stomach, but frequently surprised his friend by addressing him as Mr. Kelly.

19

Most learning requires confirmation. The word "confirmation" literally means to "make strong." A fact heard once may not make a strong enough impression to stick ; heard three times and then written down it will make an impression which will last for some time. A drill movement carried out correctly once may be forgotten a week later ; carried out forty times it will make a strong enough impression to last for years. Repetition is one of the commonest ways of confirming, hence the importance of summaries and practice. "Giving back" what is learnt is another strengthener of learning. This is one of the chief values of questions and tests.

80

Instruction is another form of confirmation that makes learning stick. 20

As we saw in Chapter 2—Preparation, the instructor has to reach a higher standard of knowledge than the minimum requirements before he can teach a class, and the mere acts of preparation and transmission will fix a subject very firmly in his mind. You can often turn your students into teachers ; all can prepare, if not transmit, a lesson, and all will therefore be more alert and critical of its treatment. This method is frequently used on cadres to train instructors, but its value purely as a method of LEARNING THE SUBJECT as opposed to LEARNING HOW TO INSTRUCT is not always realized. The method has, however, three main limitations :—

- ONE It takes time. The student must be given an extra long period for preparation, for he is unskilled.
- TWO It must achieve adequate success. If the standard of the class is low and the subject difficult, a student will instruct so badly that the class may become muddled.
- THREE It will need a good summary by the instructor. Unless the student has been exceptionally good, the instructor will often have to run over a considerable amount of the material a second time.

21

Notes and précis are useful to confirm knowledge. When they are used for this purpose their form should be brief and concise, like that of a summary. There is, however, another function they can fulfil, and that is to supply the student with a work of reference containing knowledge which it is not worth while for him to LEARN, but which it is convenient to be able to LOOK UP. The proper use of notes, précis and pamphlets together with the whole question of learning, is dealt with very much more fully in Part 2, but it is worth while noting the following points here :—

- ONE If classes below commissioned rank are allowed to take indiscriminate notes the loss of attention during the period will generally outweigh the subsequent value of the notes.
- TWO Controlled note-taking (pauses for class to take notes, later checked by the instructor) may be used with discrimination for classes of average intelligence and above.
- THREE Dictating notes verbatim may be used to confirm important features, such as summaries, but extended beyond this limit the system is in direct contradiction to all the principles of good instruction.
- FOUR The précis should generally be issued after the period.
- FIVE The issue of pamphlets is of little value unless the student can be persuaded to regard the pamphlet as his friend. The instructor must make him familiar with the layout and contents of a pamphlet to ensure that he will know

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when to turn to it for help and how to use it intelligently when he does.

22

Most of the foregoing paragraphs have been concerned with the instruction of KNOWLEDGE. SKILLS and TECHNIQUES are learnt by doing. What rules govern this type of learning?

Muscular-memory is more retentive than mind-memory.

If you have once learnt to skate well or to ride a bicycle with proficiency, you will never forget the knack. It is true that if you venture out on skates for the first time for ten years you will be a little rusty to begin with, but in a few hours you will reach a standard that it took you several weeks to achieve when you first started to learn. Most skills and techniques are for use in battle, and if the soldier is to be adequate for his job he must be trained to a standard SLIGHTLY HIGHER than that which will be required of him in action. He will never forget (within a few months at any rate) any skill that has been well and truly learnt, but you must allow for the rustiness of disuse.

23

New skills and techniques must be learnt correctly from the first. It is far harder to correct wrong habits than to learn new ones. It is easier to teach the highway code to a man who has never driven before than to a man who has started to learn on the continental system. He will subconsciously look to his left instead of his right when he comes to a T-junction, and he will tend to drive on the right-hand side of the road. The application of this fact to the teaching of skills and techniques can be summarized in four words:—

ACCURACY FIRST — SPEED LATER

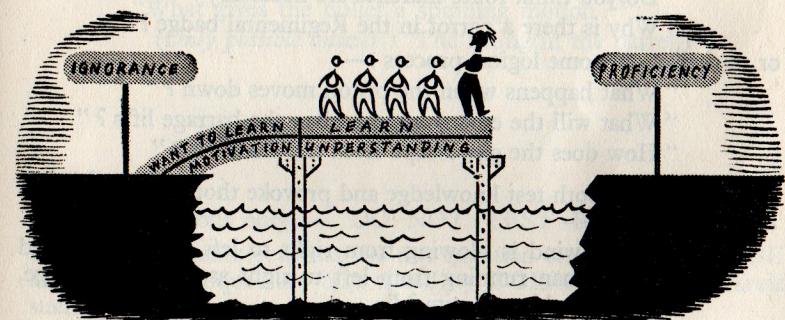
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SUMMARY

NATURE OF LEARNING

UNDERSTANDING can be made
Learning's greatest help and aid.
Strive to teach the REASON WHY
Repeatedly through ear and eye.
(Repetition notwithstanding
Alone will not give understanding.)
When reason can be brought to play,
Build up each step by Q and A,
But when the class must learn by rote
PUT SENSE IN NONSENSE. Always note
For learning facts it's often best
To teach the stuff by SWEAT-AND-TEST.
Next, some vital information,
Learning must have CONFIRMATION.
Lastly, if it's skill they need,
First ACCURACY, later SPEED.



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QUESTION TECHNIQUE

25

The instructor must know how the process of learning is going on inside the minds of his class. He is like a kiln operator who, to be sure that his wares are cooking properly, must constantly push into his various ovens a thermometer on a rod. The instructor's probes to indicate the state of each man's assimilation are the questions and, at intervals, the test. We have already mentioned the use of the question for other purposes. Here is a convenient place to survey Question Technique as a whole.

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The object of asking a question is either to test their knowledge or to make them think. The test question might take one of the following forms :—

- “ How many rounds does the magazine hold ? ”
- “ What is the vertical interval between contours ? ”
- “ Which of these weapons has the longest range ? ”

The thought-question might be designed to arouse curiosity, attention or interest :—

- “ What is the smallest bullet in use in the Army ? ”
- “ Do you think route marches are necessary ? ”
- “ Why is there a parrot in the Regimental badge ? ”

or to reason out some logical process :—

- “ What happens when the piston moves down ? ”
- “ What will the enemy expect when the barrage lifts ? ”
- “ How does the gas escape from the chamber ? ”

Some questions both test knowledge and provoke thought. These are a type of puzzle :—

- “ If the wind is blowing from right to left and you wanted to hit a man running from left to right at 300 yards range, where would you aim ? ”
- “ If your I.C.E. is 4 degrees East, and magnetic north is 4 degrees west of true north, given a true bearing of 4 degrees, what is the magnetic bearing ? ”

These are legitimate tests, but this type of riddle question has little effect except to irritate the class :—

- “ Given the order 'Short bursts', how many rounds would you expect No. 1 to fire at once ? ”

(Answer : One. The gun can only fire bullets one at a time.)

- “ What is the weight of a pullthrough ? ”

(Answer : A small piece of brass.)

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Here are a few simple rules to guide your use of questions.

RULE 1

Test-Questions and } Thought-Questions } QUESTION FIRST — NAME AFTER.

Ask your question, then pause. No one knows who will be called on to answer, so every brain is working out the answer. When you think the answer is on everyone's lips, name your man.

“ What is the colour of the 4-seconds fuze . . . (5 seconds pause) Smith ? ”

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RULE 2

Test-Questions and } Thought-Questions } MEANING CLEAR

You know what you mean when you ask the class a question, but sometimes you get the most extraordinary replies. This usually means that your question has been badly framed, eg :—

- “ What goes up the barrel of a rifle ? ”
(Possible answers : Bullets, air, gas, water, oil, rifling, a pullthrough.)
- “ What gives the bullet a spinning motion ? ”
(Only possible answer : The rifling in the barrel.)

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RULE 3

Test Questions only — DO NOT TEST EXPRESSION.

It must be remembered that the test question tests KNOWLEDGE. Skills and techniques are best tested by DOING the thing. Avoid such questions as :—

- “ What is the first rule in aiming ? ”
- “ How do you fill a charger ? ”
- “ How do you set the compass ? ”

If you ask such questions, you are testing mainly the man's powers of expression. Sometimes, in order to save time, it may be necessary to ask a man how he would do a thing. Let him answer in his own words, and remember that the fact that he cannot explain it does not mean that he cannot do it. The most skilful tightrope walker in the world would not be able to explain to you the art of tightrope walking so well as a professor of dynamics in the audience, and he might not be able even to ride a bicycle.

RULE 4**Test Questions only — NO FIFTY-FIFTY QUESTIONS.**

If you ask a question which can be answered by Yes or No, or by only two alternatives it is literally an even chance whether or not the student gets the answer right, *eg*:-

NOT—"Is the high tension switch red or blue?"

BUT—"What colour is the high tension switch?"

AND CERTAINLY NOT—"The high tension switch isn't red, is it?" That is not even a 50-50 question. It is either 100-1 on, or else an unfair trap.

A few final words of caution. Although so useful for testing assimilation, for rousing attention and for guiding the way of reason, questions should not be peppered indiscriminately over the whole lesson. A few well thought out and well timed test questions are invaluable; too many will break continuity and irritate the class. Never ask a man a question when he is engaged in any form of practice, though you may usefully question the class who are watching him. If you want to put him right, stop his practice before you put your question; he can then give you his whole mind. Lastly, **KEEP YOUR QUESTIONS TO THE POINT.**

QUESTION SUMMARY

RULE 1 Ask the **QUESTION FIRST.**
PAUSE.

Name the man to answer.

RULE 2 Make your **MEANING CLEAR.**

RULE 3 Whenever it can be avoided, do not test a man's **POWERS OF EXPRESSION.**

RULE 4 Do not ask 50-50 questions.

AND ALWAYS KEEP YOUR QUESTIONS TO THE POINT

The instructor must also handle properly questions from the class. Never discourage a genuine question, however stupid it may seem to you. Have you ever heard this:—

"I don't know why people always ask that stupid question."

Or—

"If you had been paying attention you wouldn't need to ask that."

The fault is probably yours, and at any rate such an attitude will discourage students who want to ask really good questions. A sensible drill is this:—

- Encourage the questioner. Whenever possible, say "That's a good point" or "I'm glad you raised that," etc.
- Repeat the question to the whole class, "Jones asks—"
- Pass the student to some other student, "Can you answer him?.....Smith."
- Confirm the answer yourself, "Yes, that's the reason."

TESTING

The test is another way of "taking the temperature" of the class, but that is not its only function. The many uses of the test may be summarized:—

FOR THE INSTRUCTOR

- At the beginning it tests the foundations and shows the standard of proficiency.
- During the course of instruction it shows whether or not learning is being assimilated.
- At the end, it can prove whether or not the object has been achieved.
- Later, it can show how much revision is necessary.
- It graduates the class by ability.

FOR THE CLASS

- It provides a goal to be reached.
- It confirms learning.
- It gives the class a true picture of their ability; the too-confident man is deflated, and the too-fearful man is heartened.

The instructor should be test-minded, that is he should not regard a test as a thing laid down by Small Arms Training or the PT Corps and which has only to be carried out on orders from above. He should devise his own tests, and throughout all his instruction he should **TEST BY STAGES.** The test should always be designed to cover the

essentials. Nothing is gained by setting obscure questions to try to catch the class out. As we have seen, the morale of a class can be affected considerably by test results ; they can be encouraged, or they can be given a salutary shaking-up. As a quarter-mile runner trains over a 600 yards course, it is usually best to give the class preparatory tests slightly harder than any important final test. Then, finding it easier than they expected, they will tackle the final test with confidence.

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The timing of the test requires some thought. Have you ever noticed that a waiter remembers every item you have ordered until the bill is paid ? Then his mind is wiped as clean as a slate, and he concentrates on the next customer. Similarly if you test the class immediately after you have finished a period, they will breathe a sigh of relief and strike off that piece of learning as finished. The natural cycle is Want to learn—Try to learn—Succeed—Forget. Although you may have to test at the end of the period for your own information—(Have they learnt it ?)—for the good of the class you should warn them of another test a few days ahead. This will give you some more important information—have they remembered it ? Even then, to give a reason for remembering, you should point to some further test far ahead, perhaps some big exercise, perhaps the ultimate test of battle.

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In deciding what type of test to apply, great care must be taken to ensure that all tests of SKILLS and TECHNIQUES are, wherever possible, PRACTICAL, eg :—

NOT—"Write down your orders for the attack."

BUT—"Here is your 'O' Group. Give out your orders."

NOT—"Explain how you would wire this set."

BUT—"Here is the wire, there is the set. Prepare it for use."

Written questions on skills and techniques must, for reason of lack of equipment, lack of time or plan, occasionally be set, but, as with questions, the instructor must remember that he is testing the man's expression as well as his knowledge. He may not be able to DO what he can explain quite convincingly, and, far more frequently, he may be able to DO quite well what he cannot express at all.

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Below commissioned rank the Army seldom wants to test a man's powers of expression, and so, even in tests of knowledge, it is best to avoid the essay type of answer altogether and to cut writing down to a minimum. Full details of the principles of setting and marking tests are given in Part 2, but here are a few examples of types of test which have proved their worth in practice.

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ALTERNATIVE ANSWER TEST

Q. 1. The three British Grenades with the same mechanism are :—

- (A) Nos. 36, 69 and 74.
- (B) Nos. 36, 68 and $1\frac{1}{4}$ lb. incendiary.
- (C) Nos. 69, 77 and 82.
- (D) Nos. 69, 74 and 77.

Q. 2. To set a map with a prismatic compass, you should lay the hair-line on :—

- (A) Any grid easting.
- (B) The Magnetic North line.
- (C) The True North line.
- (D) Any grid northing.

Q. 3. If, after immediate action, the LMG won't fire, you should :—

- (A) Repeat immediate action.
- (B) Remove the magazine and look into the body.
- (C) Alter the Gas Regulator.
- (D) Cock the gun, and look into the body.

Q. 4. Sulphation in a battery is caused by :—

- (A) Adding too much water.
- (B) Reversal of discharge current.
- (C) Not greasing the terminals.
- (D) Under charging.

RULES

Number of questions to be at least 50.

Answer sheets with number of question followed by letters A B C D. Student draws a ring round letter A, B, C or D whichever he considers is the right answer.

• • • •
Each of the four alternative answers must appear equally probable.

The correct system of marking is to give each man his total of correct answers minus one-third of the number of incorrect answers. (Ignore questions not attempted). This eliminates the element of chance, ie :—

Total correct	23
Total incorrect	15
Not attempted	12

$$\text{SCORE} = 23 - \frac{15}{3} = 18$$

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The alternative answer can also be shown visually (as in FS 840—Weapon Training Quiz). Within a unit the diagrams may be made in the form of an epidiascope card or reproduced on an ordinary Gestetner. Here are some examples.

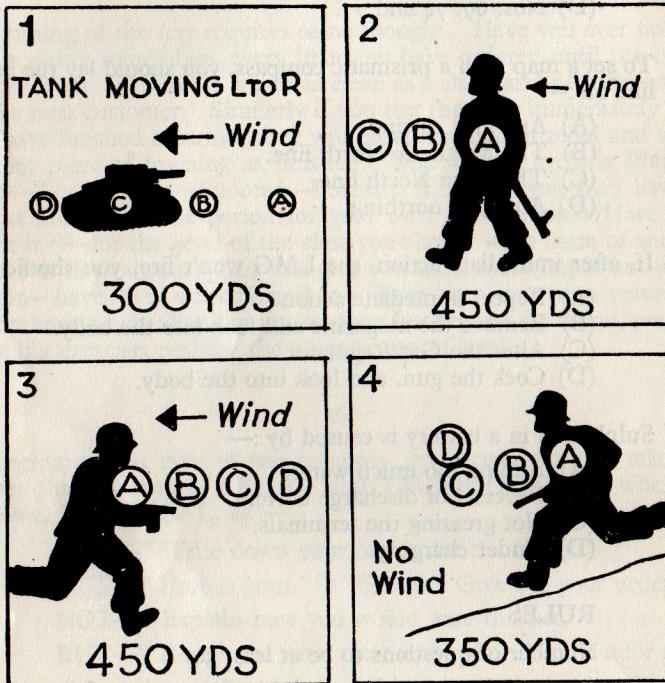


FIGURE 20

ONE WORD ANSWERS

Write missing word HERE

1. Before firing the barrel should be *Dry*
2. When a round is fired, the case *Expands*
3. In the first second, the bullet travels *600 yards*
4. Bullets that bounce are called *Ricochets*

RULES

- Any number of questions may be set.
- Total raw scores give the result.
- The test is only suitable when the object of the lesson includes teaching lists of words, dates, figures, etc. Used indiscriminately it will become a test of expression.

MATCHING ANSWERS (FIRST METHOD)

ANSWER	
1. Fall of Singapore.	C
2. Pearl Harbour.	O
3. Battle of Alamein.	P
4. Fall of Tobruk.	V
Etc.	Etc.

RULES

- At least fifteen questions should be set.
- Total raw scores give the results.
- This type of test can only be used when answers are all of a kind.

MATCHING ANSWERS (SECOND METHOD)

Which Arm of the Service supplies the following items :—

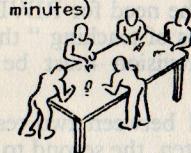
	RAOC	RASC	RAMC	RE	ACC	Printing and Stationery Services
1. Straw ...		•				
2. String ...						•
3. Typewriter Rollers ...						•
4. Steam Rollers ...	•					
5. Bandages ...			•			
6. Iodine ...			•			
7. First Field Dressing ...			•			
8. Duplicating paper ...					•	
9. Latrine Paper ...	•					
10. Tar ...		•				
Etc. ...						

RULES

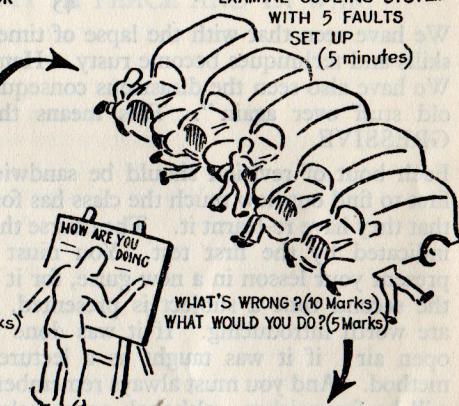
- Any number of questions can be set.
- Total raw scores give the results.

The tests that can be devised for SKILLS and TECHNIQUES are many and various. The ultimate test should be under battle conditions. In the earlier stages, however, the instructor should devise his tests so that they waste no time, are fair, keep everyone employed, and are enjoyed by the class. Here is an example of the County Fair type of test :

EXAMINE GREASY DISTRIBUTOR AND CONTACT BREAKER WITH SPRING BROKEN (5 minutes)



EXAMINE COOLING SYSTEM WITH 5 FAULTS SET UP (5 minutes)



WHAT'S WRONG ? (5 marks)
HOW DO YOU GET HOME ? (10 marks)

WHAT'S WRONG ? (10 Marks)
WHAT WOULD YOU DO ? (5 Marks)



EXAMINE 5 TYRE EXHIBITS (5 mins)
WHAT'S WRONG WITH EACH ? (5 marks)
WHAT HAS CAUSED IT ? (5 marks)
WHAT WOULD YOU DO ABOUT IT ? (5 marks)

FROM AN ASSORTMENT OF TOOLS WRITE DOWN WHICH ARE NEEDED FOR 'TRACKING' A VEHICLE. (10 marks - 5 mins)

TOTAL TIME : 20 minutes

POSSIBLE SCORE : 55 marks

FIGURE 21

That is by no means a complete survey of all the tests that can be devised.

You must make up your own to suit your subject. Interest in a test soon evaporates, so always let men know the result of a test AS SOON AS POSSIBLE. With a class of 30, using any of the methods described here, results can be out within 10 minutes. Again, post-

mortems on the results of tests must take place while the test is still fresh in their memory. Post-mortems should be exploited to the full, for they are an excellent method of teaching and confirming knowledge.

REVISION

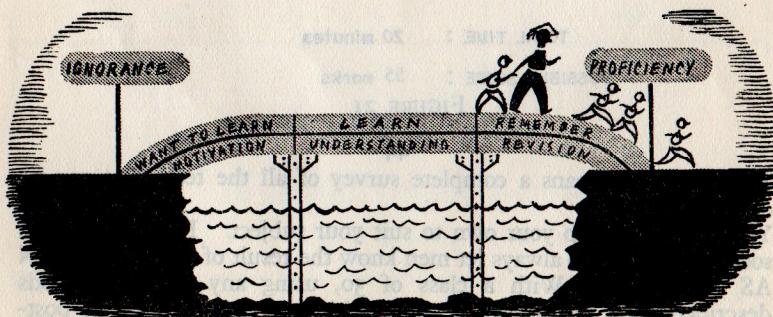
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We have seen that with the lapse of time knowledge is forgotten and skills and techniques become rusty. Hence the need for REVISION. We have also seen the disastrous consequences of teaching "the same old stuff over again". This means that revision must be PROGRESSIVE.

Each bout of revision should be sandwiched between two tests, the first to find out how much the class has forgotten, the second to ensure that they have re-learnt it. The course the revision should take will be indicated by the first test. You must exercise your ingenuity to present your lesson in a new guise, for it is far harder to hold interest the second time a subject is presented. Even the smallest changes are worth introducing. If it was done indoors before, do it in the open air; if it was taught as a lecture before, use the discussion method. And you must always remember that the pace of assimilation will be far quicker; although apparently forgotten, a subject will be learnt more quickly the second time.

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No matter what your Arm of the Service, it will be worth your while to study Weapon Training Memorandum No. 8. Here is a system of revision called Progressive Weapon Training which embodies all the correct principles. See how each period starts and finishes with a test, the second one competitive. Note the timing and lay-out of the lesson; study especially the variety of the tests at the end of the pamphlet. When you carry out revision on your own subject, no matter what it may be, keep in mind this model and make your revision FRESH, INTERESTING and PROGRESSIVE.



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Finally, it must be remembered that the ultimate test of all assimilation, in fact of all instruction and training, is on the battlefield. The student must never be allowed to regard any test or exercise as an end in itself. He must always see beyond it to the battle purpose of the lesson he has learnt. This pamphlet started by discussing the object of all training, and it is well to emphasise once again here at the end that the instructor's job is just this: TO FIT THE SOLDIER FOR HIS PLACE IN THE ARMY IN PEACE AND IN WAR.

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SUMMARY

THE PRINCIPLES OF INSTRUCTION

OBJECT

The object of all training is to fit men in body, mind, and character for their place in the Army in peace and in war. This consideration must dominate the steps in the instructional plan, each of which must have its own clear, limited object.

P REPARATION

Items of learning which are calculated to contribute towards the attainment of the object must be reduced to their essentials and graded in their degree of importance. The standard of knowledge and receptive ability of the class must be gauged. The material to be included in each step of the instructional plan can then be decided. Whether teaching skills, knowledge, or techniques, the most practical method of instruction must be selected and that which teaches through the greatest number of senses simultaneously. The individual lesson must be arranged in logical sequence, broken into a series of easily assimilated phases, each of which must be confirmed before the next is attempted. Preparation must be thorough; all else being equal, the success of a lesson depends directly upon the quantity and quality of its preparation.

TRANSMISSION

The quality of the individual instructor is the greatest single factor in the successful transmission of a lesson. The good instructor is a master of his subject, purposeful, industrious, and aware of the dramatic sense and its relation to good instruction. He must have a pleasing manner of delivery and a fair, firm, and friendly attitude towards the class with the ability to see the difficulties of a subject sympathetically through their eyes.

RECEPTION

Learning is a voluntary process, and before teaching can be effective the student must want to learn. He can be motivated by arousing his interest, by making him realize the importance of learning, by reward and punishment, by competition, by a sense of progress and achievement and by active participation in the lesson. The motivation of classes and individuals is affected by their general state of morale.

ASSIMILATION

To achieve its object, instruction must be assimilated and retained. A basic knowledge of the nature of learning will help the instructor to make his teaching memorable. Learning is aided by understanding, confirmed by repetition, and kept alive by progressive revision. The smaller the class, the better the assimilation. The instructor can measure and confirm assimilation by making the class give back their learning in answers or tests. The ultimate test of all training is on the battlefield.

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